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THE REHABILITATION PROBLEM*

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The rapid and dramatic advance in medicine and surgery during the past half century paradoxically leaves in its wake a new and important medical, social and economic problem. We meet here today to discuss this problem of rehabilitation. This is not a unique historical sequence. Almost every major scientific development is followed at a later date by social and economic after-effects. These sequelae are not always recognized early enough. It is certain that the pioneers in improved surgical techniques—immunization, insulin, and antibiotics—to mention but a few milestones, little appreciated the social and economic after-effects of saving and extending life. To illustrate this point briefly, at our present rate of accumulating greater numbers of disabled and aging persons, it is estimated that by 1980 for every able bodied worker in America there will be at least one person physically disabled, chronically ill, or over the age, sixty-five, to be supported. Economists state that this is a completely infeasible situation.

Can we conserve our most valuable resources, our human resources, during the next two critical decades? This is the problem of rehabilitation, this is the problem we meet today to discuss. We might first ask ourselves, do we have the technical knowhow to cope with the medical aspects involved in rehabilitation? The answer is yes, to a considerable extent. I do not infer that further research in medicine and related fields is not essential. We can state with assurance, however, that with our present level of knowledge we can reduce by an appreciable margin the two to six million disabled workers already in our midst, as well as the two hundred and fifty thousand disabled workers added annually. We then ask, what are the obstacles preventing every disabled person from being restored to maximum usefulness to himself and his community? In brief, the obstacles are limitations in personnel, facilities and funds. The solution does not lie in the vain hope of some momentous medical discovery which will erase disability and chronic disease from our nation. The solution does lie in the joint and effective action of the medical profession, the community, industry, labor, private and government agencies related to this problem.

Let us explore briefly the factors involved in the limitations of personnel, facilities and funds, which prevent a solution to the overall problem. The supply of trained personnel is pitifully short in every phase of the rehabilitation team. From the physician down through all the ancillary personnel we cannot today adequately staff the existing institutions where rehabilitaton activities are in progress. There are, for example, less than two hundred physicians trained in the field of physical medicine and rehabilitation today. Although progress is being made, the supply is woefully short. There are less than six thousand physical therapists and about three thousand occupational therapists employed today. It is conservatively estimated that twice these numbers would be the minimal number needed to meet our present needs, despite the limited facilities available. The problems in this matter lie not in insufficient schools for training, but in limited recruitment of students to these fields. More effective methods of recruitment of qualified personnel in all these phases is needed. Vocational counselors, specifically oriented toward rehabilitation, also are rare individuals today, and many more will be required if progress is to be expected in a nation-wide total rehabilitation program.

Aside from skilled personnel devoting full time toward rehabilitation, there is urgent need in our

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medical schools and post-graduate studies for placing greater emphasis on the rehabilitation aspect in a variety of specialities. In the last analysis, the greatest number of severely disabled or chronically ill patients throughout the country will be seen by the general practitioner, who will begin the rehabilitation program early in the course of treatment.

To meet this particular challenge the National Foundation for Infantile Paralysis, for example, has already appropriated substantial support to four medical schools to establish pilot studies in methods of teaching rehabilitation techniques at all levels of medical education. At our own institution, The George Washington University School of Medicine, this pilot program has already begun and is creating an effective pattern of teaching and practicing the "team approach" toward rehabilitation of the more severely disabled or chronically ill patient. The cooperation of the various specialty departments at the hospital and the medical school is most gratifying. Until the slow process of training more personnel in the medical and ancillary fields fulfills our needs, and this does not seem likely in the foreseeable future, progress should be encouraged by utilizing less skilled aids to assist the professional workers wherever possible. These are but a few highlights of the problems facing us now as we attempt to expand our numbers and utilize more efficiently the professional people in the field of rehabilitation.

Although encouraging attempts are being made to meet this problem, there is need for neither complacency or pessimism in regard to the staffing of adequate facilities on a nation-wide basis.

The shortages of facilities and funds are closely related. Let us examine what we have and what is needed. The cornerstone for adequate care of the severely disabled patient is in what we term a rehabilitation center. No uniform pattern or model of a rehabilitation center can meet the needs of every community. The term "center" is used in a generic sense and describes a facility where some or all of the following services are provided: medical supervision, physical therapy, occupational therapy, counseling, psychological services, speech therapy, industrial fitness or manual arts therapy, social work, vocational training and possibly special services for the blind or the deaf. Few, if any, institutions will provide all of these services. A recent survey by the Office of Vocational Rehabilitation, in March of this year, listed only forty centers established throughout the nation. Many of these centers have capacity for fifty or less patients.

Virginia, however, can be proud of the advances made by the Woodrow Wilson Rehabilitation Center in Fishersville in recent years. Although many problems still undoubtedly exist, more communities should study and learn the patterns developed at Woodrow Wilson Rehabilitation Center, of combined physical restoration, counseling and vocational training. The Division of Vocational Rehabilitation of Virginia should be congratulated for its pioneer work in this field.

Other centers may be connected with acute hospitals emphasizing the early stages of rehabilitation. In still other facilities the aspects of industrial fitness by means of special sheltered or curative workshops predominate. There is abuandant need for all types of facilities. I feel, however, that it is most effective to combine as many services as possible in a single center, in order to effectively utilize a minimum number of trained personnel and allow for a more integrated rehabilitation service.

A most encouraging phase in planning rehabilitation centers is the recent work of the Hill-Burton Division of the Public Health Service. During the past two years this division has turned the attention of expert hospital architects, builders, administrators and medical specialists toward model facilities in physical construction and design for rehabilitation units in chronic hospitals, and are at present studying plans for separate rehabilitation centers. This will be of tremendous value to a community in estimating costs and design of rehabilitation centers to meet their individual programs.

Much more could be said about shortages of facilities, but perhaps it is secondary to the third and last major obstacle, shortage of funds. Not being an economist or financier, my estimates of the amounts needed for effective expansion of facilities and personnel would be meaningless. Far more capable estimators have claimed, however, that investment in rehabilitation yields the greatest returns, both financially as well as in the relief of human misery.

Here in Virginia, for example, at the Woodrow Wilson Rehabilitation Center, of the first four hundred and fifty-three cases completing the services offered, two hundred and seventy-nine entered employment at an annual earning of eighteen hundred and twenty-six dollars. The average cost per case

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is only seven hundred and twenty dollars. The obvious return to the state by decreasing public assistance and future taxation bear indisputable evidence of the economic soundness of rehabilitation. On a federal level, it is estimated that for every dollar of federal support for the Office of Vocational Rehabilitation, the Government receives ten dollars in later taxable income. In brief, there is no question as to whether our nation can afford rehabilitation. It is becoming more evident each year that we cannot afford our present neglect of the disabled and older population.

Aside from financial support for expanding our facilities, the problem of cost and maintenance of rehabilitation facilities presents a major problem for most patients. Methods to meet these costs through expansion of benefits by private and voluntary health programs require public education and action. The ultimate approach to all these major problems lies in a cooperative effort at the community level. Whatever means are necessary to catalyze each local community to action must be found. Industry, labor, welfare organizations, both private and government, and medical groups, if sufficiently aware of the problem, must be coordinated to most effectively utilize existing facilities as well as for future planning. Over and above all the practical problems touched upon here today we have facing us a great moral challenge. A fundamental principle of our moral values in a democratic society lies in the respect we share for the dignity of the individual. In no other way can we as a nation more dramatically illustrate this democratic principle than in the rehabilitation of our many thousands of potentially useful citizens.

May I close by quoting from John Galsworthy, who, in speaking of the restoration of the disabled shortly after World War I, said—and I quote—"That this is a hard task none who knows hospital life can doubt. That it needs special qualities and a special effort, quite other than the average range of hospital devotion, is obvious. But it saves time in the end, and without it success is more than doubtful. The crucial period is the time spent in the hospital. Use that period to recreate not only the body but mind and will power, and all shall come out right; neglect to use it thus and the heart of many a sufferer and many a would-be healer would break from sheer discouragement. A niche of usefulness and self-respect exists for every man however handicapped; but that niche must be found for him. To carry the process of restoration to a point short of this is to leave the cathedral without a spire. To restore him, and with him the future of our countries, that is the sacred work".

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Other papers in the Rehabilitation Symposium are those which follow by Drs. Klingman, Nagler, Park and Duncan.

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PHYSIOLOGICAL MECHANISMS UNDERLYING REHABILITATION OF NEUROLOGICAL DISORDERS*

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In the neurological field rehabilitation is attempted in a variety of disturbances. Notably are hemiplegia, paraplegia, cerebral palsy, aphasia, multiple sclerosis, speech and reading disabilities other than those associated with aphasia, Parkinsonism and poliomyelitis. The possibility for greatest help occurs in hemiplegia, paraplegia, cerebral palsy, poliomyelitis and the speech and reading disabilities. Less favorable types of disturbances are cerebellar lesions, multiple sclerosis, Parkinson's disease and progressive deteriorating disorders of the presenile group or the hereditary degenerative disorders such as muscular dystrophy or atrophy, Wilson's disease, Huntington's chorea and progressive circulatory disorders of the central nervous system.

Subacute and chronic neurological disorders are very frequently neglected upon the assumption that therapy is futile. This has probably come about because of lack of specific curative agents for many of these disorders and from the fact that chronic lesions of the nervous system physically disable the individual in his work to the extent that he must be replaced, become a complete invalid and ultimately be confined to a restricted life, to bed or be referred to an institution for the chronically infirm or disabled.

Regardless of the nature of the disabling lesion there is always hope for some type of rehabilitation, whether it be that of self care, improvement in ambulation and personality adjustment except in all but markedly deteriorated cases. The home situation, the attitude toward the family, family attitude toward the patient, and social and economic resources play tremendous roles in achieving success or determining failure.

It goes without saying that one evaluates each case as a whole. One must evaluate the patient medically, neurologically and particularly from the psychiatric standpoint and then fit the results into the social, environmental background, and, if possible, determine then what occupational and vocational facilities are available and can be utilized.

For years neurologists, orthopedists, and physical therapists have utilized and devised methods for refitting or rehabilitating individuals with disabling neurological lesions. In more recent times the evolution and development of training centers or clinics for the victims of cerebral palsy and poliomyelitis have brought these methods to the attention of the medical profession and the public at large. Even more recently the war gave a terrific impetus to rehabilitation with the result that it publicized and popularized the work which has been part and parcel of neurological, orthopedic, and physical medical work ever since these special fields existed. It is very similar in this respect to the pseudo specialty of psychosomatic medicine which likewise enjoyed a parallel course of development and expansion and was offered to the profession and public as a new approach to medical problems, whereas for years every practitioner and psychiatrist was treating psychosomatic problems. Now that this relationship has been given a very euphonic name it suddenly has become acceptable to individuals who had considerable hostility to psychiatry and something psychosomatic is now discussed in the best of circles with no personalization of one's difficulties. So, too, physical medicine and rehabilitation have passed into a big time era. Development of centers within the Armed Forces, Veterans Administration hospitals, special clinics and facilities in the teaching centers and private hospitals are now well known sources of help for the chronically disabled neurological patient.

There are three primary parts in the retraining program of neurologic patients. The first consists of a complete medical evaluation of the patient. This includes complete medical survey aside from the evaluation of degree of residual nervous system change. In addition, the mental capacity and personality structure must be considered, especially evaluation of the patient's pre-illness personality *versus* the estimation of the individual's personality reaction to his illness. These studies then must be considered

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in terms of the patient's social and vocational situation. Probably the most important observation of this primary part of the retraining program is the estimate of the individual's interests, motivating forces, desire and determination to adjust to or improve his state of disability. Equally important is the information concerning the patient's home situation and the family can be most helpful to the patient and physician. Lack of cooperation on the part of the family is often the result of not understanding its role rather than an unwillingness to be of help.

The second phase of the rehabilitation program for the chronic neurological case consists of establishing a definite goal for the individual. This obviously must be set for each individual and varies with the situation, age, degree of disability, mental capacity or deterioration. However bad some things may be, certainly some goal can be established even if it is nothing more than teaching the individual self confidence—ability to go about, feeding and dressing himself, going to the toilet. In others, one is more hopeful of reaching a point where achievement may be rewarded with some economic values for the patient.

The third phase of the rehabilitation program is one of maintaining the program already set in motion by the first two phases. The guidance, sympathy and direction of the patient, supervision of general medical procedures that may be complications of the neurological difficulties such as cardiac decompensation, bladder and bowel care.

It has been estimated that improvement of the patient can be hoped for in about 75% of patients from neurological retraining programs if the physician and family are willing to spend some time and effort at it and mobilize the local resources aimed toward the therapy of the individual. The individual must also have the inherent capacity to strive for improvement and adjust to his disability.

It is not my purpose to recite to you the various conditions and varied procedures and maneuvers that are carried out for improving specific neurological disorders. These can be witnessed any time and observed much more vividly by attending a single session of any physical medicine department's therapy activity. It has been estimated that man in his normal state of health is utilizing approximately only 1/10th of his brain and nervous system resources. Therefore, it might be well to consider how the mechanisms which permit us to carry on, develop, utilize and educate unused portions of our nervous system when some adversity strikes us down by deranging certain nervous system mechanisms and what reserve parts or emergency systems can be thrown into action. Neurological disorders enjoy a unique position for that reason in the rehabilitation effort. The lesions are often static and compensating neural mechanisms may be available.

The brain is not a single nerve center but a collection of nerve centers inherited from ancestors that lived in many, many years past. Its arrangement is similar to the earth's layers of rocks, the most recent layers lie on the surface and the ancient structures are piled underneath. We speak of this as the phylogenetic arrangement of the neuraxis, from spinal cord up to the most recent acquisition, the cerebral cortex, a sheet or layer of gray matter whose nerve fibers are contained in the cerebral hemispheres. If we pass down the various levels of the brain, it is similar to running a motion picture backwards, the various levels representing stages in the history of the brain and, in descending order, contain nerve centers which first appeared and still are present as high order centers in mammals, reptiles, amphibians and fish. Lowest in the scale is the spinal cord.

Careful, detailed, painstaking anatomical studies made possible by difficult laboratory techniques, indicate that many nerve fibers carry impulses from all parts of the human body to and from the cortex, the most elaborate organ in the body. The human cortex contains about twice as many cells (50 billion) as the highest ape. These cells form a highly integrated organization which is constantly in touch with millions of sense organs in the body. The brain learns by being informed constantly by the areas of the body that in turn are kept active by a continuous stream of impulses arising from the cortex and other centers.

For purposes of emphasizing the utilization of these mechanisms of the nervous system, it would be well for us to review the neuro-physiological mechanisms of the nervous system and see how the nervous system adapts itself to injuries in the various parts.

The nervous system arrangement for function is that of groups of systems, the coordinated function-

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ing of these systems producing successful, smooth, coordinated, well controlled motor acts. These in turn are governed by three chief systems or mechanisms, the motor pathways, the sensory system and the coordinating system supplied by the cerebellar and mid brain structures. The peripheral nerves are important, too, but we would place emphasis on the other system. Disturbances in some of these systems may disorganize the function of other systems, such as a lesion in the extra pyramidal system setting up the mechanism for production of rigidity and tremor, a lesion in the posterior columns of the spinal cord disorganizing the proper coordination of muscle movements by removing the sense of position, a lesion of the cerebellum or cerebellar pathways providing a disturbance by removing the fine integrated coordination of muscle groups resulting in tremor or ataxia.

A characteristic of the nervous system is that symptoms of anatomical lesions vary according to the levels of the nervous system involved. The lower levels are more highly organized in that there is a high degree of perfection of action of neural elements with each other, but their functions are less modifiable than those of higher levels. There is, therefore, less possibility of the activity of other parts compensating or replacing their functions when lost or impaired.

In lesions of the conducting tracts and subcortical masses of grey matter there is greater opportunity for other systems to substitute, to some extent, at least, the functions which are lost or impaired.

In the cortex of the forebrain the relation of function to local structure is more variable. Certain functions are rigidly localized in highly specialized centers and destruction of such a center may abolish permanently the function it represented. This holds mainly for the receptive areas through which the cortex receives impressions from the inner or outer world. This is especially true of the visual cortex, where a minute lesion may cause serious or irreparable damage.

Localization is less discrete and rigid in cortical areas through which the brain initiates movement and other reactions. Injury of a small part of the motor cortex may produce little or no permanent disability. However, a distinction may have to be made between various categories of movement. Those which have been learned or acquired by experience are more dependent on integrity of the cortex and suffer most severely when damaged. Such examples of retention of movements learned by experience and retained in the Parkinson state and utilized in the rehabilitation program are well known.

Complicated and highly integrated actions and forms of behavior are not represented as such in the forebrain, only their components depend on local areas. If certain of these are lost, their loss may disorganize or impair correct performance of the act as a whole. Nevertheless, crude abilities may be preserved and improvement in acts be developed by re-educational methods.

Interpretation of symptoms is often complicated by the capacity of the nervous system in adapting itself to changed conditions imposed on it by disease. Even if a flexor muscle is grafted to the tendon of an extensor muscle it may give up its lifelong habit of flexing a joint and learn to extend it. When the proximal end of one nerve is sutured to the distal portion of another of different function, it may, when regenerated, serve to innervate an entirely new set of peripheral organs. Similarly, when one reverses the position of the pen in one's hand, one can without much hesitation continue to write fairly accurately with the dorsum of the hand towards the paper, even though many movements are the reverse of what one normally uses.

The most important system involved in rehabilitation of the chronic neurological case is the motor system consisting of the corticospinal or pyramidal system and the extrapyramidal system (centers in brain stem, basal ganglia and efferent fibers from them). Under normal conditions, these two systems work together and efficiency of each depends largely on collaboration of the other.

Each motor nerve arising in the eventual distribution of this motor activity is from the final delivery system, the anterior horn cell, which innervates several muscle fibers, perhaps as many as 200, but the number varies. Smaller muscles and those used for delicate movements, such as ocular, receive relatively more nerve fibers.

Likewise, final distribution of nerve fibers from anterior horn cells intermingle in nerve plexuses, so that, when peripheral nerves are formed, each contains fibers from several roots. The distribution, therefore, of paralysis due to disease of cells of a ventral horn, or of a ventral root, may consequently

differ from that which results from injury of a motor nerve.

It was formerly assumed that all corticospinal nerve fibers took origin from the large Betz cells which are found in the precentral convolution of the cortex and that only fibers from this area constitute the pyramidal tracts. Recent studies show that the number of fibers in each pyramidal tract is 25 times the number of Betz cells in the corresponding hemisphere. Other fibers come from smaller cells of the motor area in neighboring regions, possibly also from post-central gyri as many fibers remain after both precentral and postcentral cortex of the hemispheres of the same side have been removed. The exact origin of many of these fibers is not yet determined, but they play a tremendous role in the compensation or retraining and rehabilitation program.

The cortical area for distal portions of the limbs (those parts employed in delicate and skilled actions) exceeds greatly those from which movements of the trunk and proximal parts of the limbs can be obtained.

If one stimulates points of the motor cortex it may provoke a movement, which can also appear when adjacent points are stimulated, either in a part of the cortex in front or from an adjacent point that ordinarily produces another movement. Under certain conditions even an opposite movement may be elicited.

These divergences are known as facilitation of response, reversal of response, and deviation of response, and indicate functional instability of cortical motor points and form the basis of adaptive capacity in rehabilitation in lesions involving the motor cortex. The cortex is, therefore, a plastic or labile organ and it is on this property that unrivalled power of learning by education and experience depends. A man may acquire more new and skilled acts. Furthermore, there is an overlap of regions from which movements of different parts of the body can be obtained, even of the fingers and toes. The cortex is no longer looked upon as an effector mechanism which merely transmits preformed patterns of innervation down to the spinal cord.

Another feature of nervous system organization important in rehabilitation is that the cortex has a tendency for strong or prolonged excitation of one of its excitable points to spread to neighboring points or even a whole motor area, and it may produce a series of movements in a sequence.

The cortex normally has its power of initiating and executing fine and skilled voluntary movements by having lower motor mechanisms under its control. This it does by impulses which modify or suppress subcortical reactions which would interfere.

The second important system of pathways is that of the sensory system. Sensory impulses enter into the functioning systems by influencing motor cortical acts and these support or augment its activity. The integrity of cortex, therefore, is necessary for isolated movements and delicate and finely coordinated acts.

In regard to aphasia, much of our hope in retraining depends on the functional capacity of the minor cerebral hemisphere because speech involves a two hemisphere arrangement with one hemisphere being the dominant or controlling one. This holds true for handedness as well as for speech.

The hemiplegic comprises one of the largest groups of the neurologically disabled but he often has the best chance because he has a stationary brain lesion and he can learn good gait and self care in approximately four months time.

The third great system involves cerebellar and cerebellar pathways. Lesions are much more complicated here and the outlook for help in lesions involving these structures is not so good for the reason that the lesion is usually progressive and most often due to multiple sclerosis. If the lesion is static, however, improvement can be expected, particularly from corrective procedures developed through the visual optic and also motor system facilities.

Lesions of peripheral nerves usually have a good prognosis as the nerve elements may regenerate, and, if the limb is maintained in good condition, recovery possibility is good.

Spinal cord lesions resulting in paraplegia with both legs involved, with bladder and bowel disturbance but with good upper limb function, also have a fairly good rehabilitation chance. Spinal cord lesions involving various areas due to circulatory or nutritional disturbances are treated accordingly. Those with anterior horn cell change similar to polio and those with dorsal and lateral column

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change similar to paraplegia and cerebellar disturbance.

The major chronic neurological disorder is often that of the problem of cerebral vascular accidents or strokes. Strokes are now the third major cause of death, ranking only behind heart disease and cancer. Despite the high incidence of death following acute development of strokes there are an estimated total of 1,500,000 persons in this country who have survived such an accident but are suffering from varying degrees of paralysis of one side of the body.

Aside from the paralysis of one side of the body there may be an associated involvement of the speech centers resulting in aphasia. Both of these results from cerebral vascular accidents have a profound effect upon the individual because frequently he is spared the stress and strain of daily gainful activity and leads a protected life and thus is preserved for many more years, estimated as a 90% chance of a life expectancy common to the same age group, but faces these years with what has and is by many individuals considered to be a hopeless situation. Oftentimes it has resulted in the patient being relegated to the hospital for chronic disorders or kept in the offing in the home, protected and shielded from family and friends. Where facilities are available it has been shown that about 75-90% of the victims of strokes can live at home and meet their daily needs and about 40% are able to return to their former or some other gainful work despite the fact that the average age group for the stroke group is in the early sixties.

One cannot pass the matter by without mentioning the tremendous need for facilities and personnel to help rehabilitate speech and reading disabilities associated with strokes. It is one of the most unfortunate and glaring errors in our present day educational program that even the school systems make so little or no provision for help for the child who has a speech and, even more important, a reading disability. The latter condition frequently goes unrecognized and the child then becomes penalized by being considered ignorant and unsuited for schooling. Some of these situations result in the child ending up as a delinquent or a psychopath because of its efforts to compensate by developing socially unacceptable traits and characteristics. There are so few available to help with the aphasic individual or the child with a speech or reading disability.

It is most important that in all problems of rehabilitation and preservation of the neurological cases, the family must be made to participate in the program from the earliest appearance of the illness, even if it means that they come into the hospital to help fit the program.

As a matter of interest, figures are available from many hundreds of cases as to what can be accomplished in neurological disorders. The average hospital stay for this number of cases was 74 days—self care gain being accomplished in hemiplegia in 77 days, 10 days in cases with ataxia, 20 days in cases with multiple sclerosis. Parkinson's disease, flaccid paralysis, and other disorders have a longer period of rehabilitation gain.

Well conducted studies show that the physically handicapped worker, when selectively placed on the basis of matching physical capacity against the physical demands of the job, has fewer accidents, less labor turnover, less absenteeism, and equal or better production rates than the so-called normal worker beside him in the same job.

Medical men must realize that medicine's big problem no longer is that of the acute infection or acute communicable disease, but is the chronic disease problem and the disabilities which they leave. The advances in medicine have resulted in this disproportionate medical problem of care for the chronic disabilities, many of them of neurological nature.

Outside of the military services and the Veterans Administration and relatively few physical medicine and rehabilitation units in civilian hospitals, there are but a handful of organizations equipped to provide for the patient with a neurological disability. One of the finest and one which every Virginia physician should feel proud of is the Woodrow Wilson Rehabilitation Center at Fishersville, which fills a tremendous need not only for the handicappd from this state but is also utilized by individuals from many other states. Another is the facility furnished at the Medical College of Virginia in Richmond. Another is the unit at the McGuire V-A Hospital in Richmond, one at Kecoughtan, and one right here at the V-A Hospital in Roanoke.

We as physicians overlook a tremendous responsibility in adhering to an attitude or basic philosophy

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that the assignment is completed when the acute illness or surgery has been completed, neglecting the integral part of medical care that is embodied in the rehabilitation service to the patient. To the neurologist this is not a new problem because it has always offered one of the oldest therapeutic tools known to medicine in the care of the chronic neurological case, yet the general problem of rehabilitation has become a relatively new specialty in other fields. The unique adaptation faculties of the nervous system structure and physiology stand out in this respect in rehabilitation work. The underlying mechanisms with their compensatory, accessory systems, generally leave some opportunity for improvement by faithful application of psychiatric, neurologic and physical medicine principles.

Night Driving Hazards.

Use of tinted glass in automobiles or the wearing of colored glasses for night driving is dangerous because it causes decreased visual efficiency, in the opinion of Dr. Paul W. Miles, St. Louis.

"Particularly unfortunate is the popular selection of pink for the glasses and aquamarine green for the windshields," Dr. Miles wrote in the Archives of Ophthalmology, published by the American Medical Association. "While pure red and pure green filters may be quite transparent, in combination they are opaque."

Night driving is a similar visual task to walking into a dark movie theater. When a person first walks into a dark movie theater there is poor visibility of the seats until the eyes have adapted themselves to the dark although the screen can be seen very well.

In night driving, every change from light, such as headlights, to dark and from dark to light requires a new adaptation of the eyes. This adaptation process is so slow that if it occurred in a dark movie theater the seats forever would remain black against black, just as the objects at a distance or the shadows appear on the road.

"As the driver studies the road at the distance limits of the headlights, he constantly tests his visual thresholds," Dr. Miles said. "Objects come into view, attract attention, and are finally identified, as the automobile rapidly approaches. Under threshold conditions, an image may form on the retina 50 times and be so weak that only 25 attention responses follow. Any decrement in illumination or visual efficiency during high-speed night driving could delay reaction enough to result in a serious accident.

"Modern windshields were made green because large areas of glass let in too much heat from the sun. A green filter cuts out the red and infrared rays which carry heat. For purposes of night driving this windshield color becomes the worst possible selection, because automobile headlight is unbalanced. Almost two-thirds of headlight energy is concentrated in the red end of the spectrum, and only one-third is in the range to which a green windshield is most transparent."

"Green windshield glass should be in a separate layer, to be moved aside for night driving. Persons with defective vision, including color blindness of the common type, should be advised to add auxiliary headlights to their automobiles and to avoid any type of tinted glass for night driving."

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EMOTIONAL SIGNIFICANCE OF SEVERE TRAUMA*

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The concept that sickness of the body influences the mind is thousands of years old. We all remember the Latin proverb—"Mens sana in corpore sano"—a healthy mind in a healthy body. It is expected that adverse changes in the body structure will cause disturbances of the harmonious inter-relations between psyche and soma and so effect a psychological reaction.

When discussing the emotional significance of severe trauma, we have to consider the following problems:

(1) The influence of the trauma on the individual's concept of his body image.
(2) The effect on his social relations.
(3) The economic impact.

What thoughts come to the injured after he has recovered from the first physical onslaught, after he has received emergency treatment and now has time to consider his situation? The emotional shock of these experiences manifests itself in various aspects, of fear, anxiety, doubt about the future, correct knowledge or exaggerated concept of the duration of his incapacity, and realization of the permanency of his affliction. Hope may give way to helplessness, or, conversely, unjustified hope of return of function may be expressed. This pathetic optimism is noted, for example, in paraplegics.[1] Fear of recurrence of illness (as in coronary disease) may cause overcautiousness. Superstitious beliefs may exaggerate the significance of the original physical trauma.

The patient starts to worry about himself. Thoughts come to him as to the problem of disfigurement and the disturbances in the "libidinous structure" of the body image (as Schilder[2] emphasizes), the fear as to possible frustration in his attempts to move around, to ambulate, to be active, to work, to be able to fulfil and enjoy the sexual role. He asks himself, "What will the effect of my injury be in relation to my wife or husband, family, friends, and co-workers?" Fears take possession of the injured—fears that he may lose contact with his surroundings, that he will become alienated from family, friends and children because of the loss of contact during prolonged hospitalization. In brief, the contacts with society, the family group, the friends and co-workers and the community at large are at stake.

And last, but not least, the economic threat: "Will I be able to support my family and myself, will I become a burden to society, will I be capable of continuing in the same pattern of economic life, or will I be reduced in status and in economic prestige as well as in social prestige and personal happiness?"

This is only a brief and condensed enumeration of the problems and fears besieging patients. What reactions may we anticipate, what psychiatric danger signals should we look for, and what can we do to prevent an unfavorable psychological reaction which may at times exceed the seriousness of the severe physical trauma itself?

We expect and allow for a certain amount of anxiety and apprehension; also, for the acute sadness which we call "depression," but which is really an "acute grief reaction." This is a *normal* reaction usually accompanying this first anxiety. If the patient can overcome these early emotional symptoms and can obtain equilibrium of mind and emotions, he can then be led to acceptance of his disability and to constructive thinking for the future. But—if not—what type of untoward reaction may we see?

(1) THE NEUROTIC REACTION. The initial anxiety and apprehension may continue, even increase, become a pattern of behavior and, eventually, a way of life. The patient may become disproportionately depressed. He may be preoccupied with suicidal ideas. He may even attempt suicide. Or the duration of the initial grief reaction may become excessive, paralyzing all attempts at rehabilitation. Either pattern would be an abnormal depressive reaction characterized by the excessive amount, the excessive symptoms, and the excessive duration of the sadness. Obsessive-compulsive reactions are sometimes observed. They manifest themselves by obsessive preoccupation with disfigurement, loss of function and disability. Or we may see an unconscious exaggera-

*From the Department of Medicine and Surgery, Veterans Administration, Central Office, Washington 25, D. C.
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tion of the significance of the trauma which manifests itself in the so-called "hysterical overlay," the conversion symptoms which add pseudo-physical signs to the after-effects of the injury. We may observe disturbance in sensations without organic basis, the glove and stocking anesthesia or the loss of sensation over one-half of the body, usually on the side where the traumatic attack was experienced, sometimes including the special senses: The patient hears less, sees less, smells less, and tastes less on the affected side. Functional motor paralysis may be found, abasia-astasia (inability to walk and stand), hysterical aphonia, amaurosis or seizures of non-organic type may add to the confusion and difficulty in distinguishing *bona fide* organic sequelae of the trauma from the functional overlay. These manifestations must not be confused with conscious attempts to exaggerate the symptoms, nor with malingering.

To be sure, we do see these reactions more often when compensation, pension or litigation are involved. But we find also in patients who are free from problems of "secondary gain," hysterical reactions, or—as we are now calling them in our new nomenclature—conversion reactions, meaning conversion of emotional conflicts, desires or fears into signs and symptoms.

Thus, there are four "neurotic" reactions. They are anxiety, depression, obsessive-compulsive behavior, and conversion reaction. They are characterized by increase of the normal emotional symptoms reaching proportions which make the individual incapacitated beyond the usual degree and beyond the usual period of time one may anticipate or by a change of his fears and desires into pseudo-organic manifestations which are an addition to the organic picture.

(2) The Psychotic Reactions. Instead of a neurotic reaction, we may see a psychotic pattern. Here we have an individual who is so stunned by his physical impairment, disfigurement and disability that he retreats from the world of reality into a world of make-believe. To defend himself against the hostile surroundings, he breaks with reality. The form of the psychotic reaction varies—some show a psychotic depression; that is, the patient exhibits severe guilt feelings. He accuses himself of misdeeds which, he says, are responsible for the injury or physical illness. We also see paranoid reactions where the patient feels that the world as a whole or certain people have done him injustice, are persecuting him and are so causing loss of stature in society. Other patients may withdraw into the mutism and immobility of the catatonic and so shut out the world. Or they over-compensate their feelings of insecurity by over-activity, or agitated behavior with euphoria, expressing feelings of well-being and sensations of power, in brief, showing the well-known behavior of the agitated manic psychosis.

(3) The Aggressive Reaction. Sometimes the abnormal reaction is neither neurotic nor psychotic. Instead, we may see a personality reaction, a pattern for which we have a great number of other names, as, for example, psychopathic states and similar expressions. The patient may feel insecure due to his impairment. He may then hit back at the outside world. He shows his aggression by emotional instability with quick change of his mood and temper tantrums, or he freely expresses hostility and aggressiveness, is uncooperative with the physician, his co-workers and disrupts all attempts at rehabilitation. Others may show a non-psychotic paranoid reaction without a break with reality. Such a patient insists that he has received a dirty deal in life, that everything goes wrong, that nobody loves him, and that nobody cares for him. Such attitude represents a very difficult situation in the management of the patient.

(4) Escape Reactions. Here we have a patient who takes refuge to an "ostrich policy." He doesn't want to see what happens, he wants to flee from the situation but he doesn't know where to flee. He runs away from the family to the hospital, and runs away from the hospital to the family, or away from both situations. This situation may culminate or even be characterized from the beginning by excessive use of alcohol "to forget."

(5) The Dependency Reaction. This patient "does not move." He wants, perhaps, to stay indefinitely in the hospital where he is protected and can continue his dependency on the "father doctor" and the "mother nurse" or the hospital as "parents at large." Or, perhaps, he takes refuge to his family, and stays home, and refuses to meet society and its challenge. A very dangerous dependency reaction is that of drug addiction. The medicine gives relief. The injection symbolizes the help of the doctor. These become the outward expressions of

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the protection by the "father" and "mother" figure. The patient wants to continue to receive this expression of love and tenderness. I must explain here that a great number of these emotional conflicts take place on the unconscious level. In this process, we physicians, in our desire to help, sometimes overdo the relieving of pain. Or our timing may be bad. We may fail to set the right "cut-off" date and so unintentionally cause the patient to become addicted to opiates, barbiturates, or other drugs. This is too complicated a subject to be further detailed here.

(6) THE REACTION OF INDIFFERENCE. Here we have a patient who doesn't appear to be depressed. He just doesn't care. He is not actively aggressive, he is not hostile, he doesn't show anxiety, he doesn't retreat into unreality, he doesn't blame others; but he doesn't do anything positive either. He will follow medical orders, in a passive way, but his general attitude will be "I just do not care." Some take refuge to alcohol, although in a rather passive and undemonstrative way. These patients present some of the most difficult problems in management and are, in reality, persons who are depressed to the degree that they show complete lack of drive and of zest for living.

I will not discuss the literature in this field, some of which may be found in the bibliography at the end of the paper.

A few words on what we consider a desirable reaction. We would like the patient to accept his disability, understand his limitations and liabilities, and particularly his possibilities and remaining assets, that he plan for the future, and that he cooperate with the medical staff and the co-workers, the family and the community for his own sake.

How shall we help the patient to reach such desirable attitudes? We try to understand his reactions and mechanisms. We accept some of the undesirable reactions and try to help the patient, and not think that "this is all pure cussedness." We treat not the disease but the individual. We have to push one person and restrain the other, according to his individuality and not according to his disease. For example, a patient has coronary disease. This, from the emotional standpoint, is a severe trauma even if there is no outside force which caused the injury. He may have to be held back. Another may have to be encouraged to enter activities. We try to see with the patient's eye, seeing his possibilities even in spite of his severe impairment. We have to abandon the attitude that "I would rather be dead than have such illness or such disfigurement." The patient senses our feelings so we have to think in terms of the patient rather than in our terms. Pinner and Miller's[3] book, "When Doctors Are Patients," was a great help to me in understanding many of my patients. We provide an outlet for drives in activities in which the patient can compete or excel. I give examples which may be known to you—the sport activities which are carried on by paraplegics, as wheelchair basketball in this country, or wheelchair polo in England. If this is not possible, we give the patient a chance to compensate his deficiencies and sublimate his aggressive drives by mental endeavors, by activities in occupational therapy, by painting, writing, producing, being creative. Rehabilitation activities should not be forgotten, but will be discussed more in detail by other speakers. We have to allow the patient to regain his prestige in the economic, social, and sexual spheres:—In the *economic* sphere, by showing him ways in which he can use his capabilities; in the *social* sphere, through recreational activities in which he can participate and through sports where possible; and in the *sexual* sphere, allowing him to sublimate by other activities those drives which are unadjusted or impossible to fulfil.

In this way we may prevent or ameliorate some of the disastrous effects of the emotional impact of severe trauma.

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Teach Basic Fire Safety Rules.

Keeping the home fires burning and keeping from being burned in home fires are two entirely different things.

To prevent unnecessary injuries and deaths from home fires, parents should teach their children the elementary facts of fire safety, Dr. Carl J. Potthoff, Rochester, Minn., wrote in Today's Health magazine, published by the American Medical Association.

"After the Christmas upswing in the incidence of home fires, there usually is a moderate decrease for several weeks, and then a rise again in February and early March. There is no practical way to fireproof a home completely; the term 'fireproof' when applied to dwellings of any sort is a misnomer. Even in homes of the safety-conscious where education within the family, good housekeeping, construction and repairs are aimed to prevent fires, some hazard exists.

"Accordingly, homemakers should work out plans with the children for use if fire strikes. Education should be judiciously factual according to the age of the child, lest children develop a haunting fear of home fires, particularly night fires."

According to Dr. Potthoff, parents should stress:

1. That escape from the burning building, not the saving of property, is the paramount objective.

2. How to notify the fire department and how to use fire extinguishers.

3. That if clothing catches fire, either in a home or otherwise, it usually is advisable to lie down and to roll over slowly, as flame and heat rise to the face. Wrapping a blanket about the body may be worth-while; running tends to fan the flames.

Dr. Potthoff stated that children also should be taught that when escaping from a fire the following rules should be observed:

1. Keep low in a fireswept room as the risk from heat, smoke and carbon monoxide is less.

2. Don't open doors and windows because drafts cause a faster spread of fire.

3. Doors should be opened cautiously while standing behind them, as the next room may contain superheated air, a blast of which may be lethal.

4. The important body parts—face, hands, scalp—can be protected somewhat by a heavy towel or article of clothing, preferably wet, while dashing through flame.

5. Jumping from upper stories often is fatal and often unnecessary as rescue may be at hand.

6. When doors and transoms are closed, open a window slightly and stay near it, breathing the incoming air.

7. Don't re-enter a burning building to try to rescue a toy or pet.

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DISABILITY CONTROL*

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William S. does not appear to be an unusual man. He is thirty-two years old, married, works an eight hour day, can stoop, bend, lift, run and jump. He does have slight limitation of motion in his low back and knees, but today he would meet the physical qualifications for most average types of employment. This was not always true.

On July 26, 1951, Bill fell 25 feet from a telephone pole while pursuing his usual work for an electric power company in the State of Virginia. Due to the fact that the company had prepared the men in his work group in first aid, he was moved properly without bending his back and was taken to the hospital in Martinsville, Virginia. Here it was found that Bill had sustained a compression fracture of the 12th thoracic vertebra and he had analgesia, anesthesia, bladder and bowel incontinence and motor paralysis below that level. Early decompression was done with relief of spinal cord pressure. Gradually sensation, muscle power, bladder and bowel function returned through a somewhat stormy course complicated by genito-urinary tract infection and recurrent evidence of spinal cord compression.

By January, 1952, the acute phase of treatment was completed. The portrait at that time revealed an asthenic, underweight male who had diffuse muscle atrophy due to disuse, marked limitation of motion in the cervical, thoracic and lumbar spine, shoulders, elbows, hips, knees, ankles and toes. There was some persisting numbness in the toes of the left foot and marked weakness in extension of the left great toe. Because of the severe generalized weakness and limitation of motion that had developed as a result of the necessary prolonged bed rest caused by spinal cord compression, repeated operations and infection, he was a stretcher case.

He was transferred from the acute hospital to Woodrow Wilson Rehabilitation Center at Fishersville, Virginia, in January, 1952. There the medical regime was continued and he was started under treatment in physical therapy and occupational therapy to increase range of motion, strengthen muscles, teach self care, train him in walking and prepare him for return to work.

In approximately 45 days of treatment Bill had reached a sufficiently good level of functional ability that he was able to be discharged. He had not regained full strength and full range of motion in that time. However, it was the opinion that he was ready to return to partial employment and continue on a home routine of hydrotherapy, prescribed exercises and gardening to regain his best strength and range of motion.

On May 1, 1952, which was ten months after injury, he returned to full time employment. His residual degree of general disability was now estimated to be 15%.

In order to get Bill back to work in the shortest period of time, many services and disciplines had to be mobilized:

(1) An adequate first aid team
(2) Acute surgical, medical and nursing care at the community hospital
(3) A Social Service Agency
(4) An interested employer
(5) The State Industrial Commission
(6) An Insurance Company
(7) The Division of Vocational Rehabilitation
(8) Vocational testing and guidance service
(9) Physical Medicine and Rehabilitation Service at Woodrow Wilson Rehabilitation Center, and
(10) Perhaps the most important, a well motivated patient.

From the accident to the time the patient returned to full time employment every member of the "team" was oriented in limiting the degree of disability. Each group that dealt with the patient defined the area of injuries and its scope of service. The first aid team recognized the possibility of a severe back injury. They moved him to a hospital area where diagnosis and specific life saving, definitive treat-

*Read as a part of the Rehabilitation Symposium at the annual meeting of The Medical Society of Virginia, at Roanoke, October 18-21, 1953.

ment was undertaken. This group of physicians found after satisfactory control of the acute disorder had been attained, additional services were needed to return this man to full time employment. Through effective planning and treatment this patient was able to return to full employment in less than one year following a severe back injury which could have easily ended his life or left him severely disabled. This is an excellent example of disability control.

A survey of the financial aspects of this industrial accident reveals the following:

Cost of Hospitalization and Physician care	$3,399.60
Compensation paid to family	797.16
Cost of service at the Rehabilitation Center	233.45
Final settlement (15%)	1,276.00
Total Cost	$5,706.21

By developing a sustaining disability control program the patient, the employer, the Industrial Commission and the insurance carrier saved about $7,000.00.

In considering the cost of injury, had the patient been discharged from the acute hospital at the time of convalescence, it is difficult to determine an absolute disability as there is no control. It is the judgment of several physicians that he would have been considered to be 90% disabled for future employment. Muscle strength does not return spontaneously and the longer joint motion remains restricted the more guarded is the prognosis for return of movement.

It is estimated that the minimum costs would have been as follows:

Cost of Hospitalization and Physician Care	$4,000.00
Compensation to the family	1,040.00
Final settlement (90%)	7,656.00
Total Cost	$12,696.00

This review does not take into account that a new man would have had to be trained to replace him in his work and the untold difficulties that would have arisen to Bill's famliy had he not been employed for a considerable period of time.

The story of William S. has been repeated many times in the State of Virginia, but they are isolated cases. The findings of the Liberty Mutual Insurance Company, The American Mutual Liability Insurance Company, the Division of Vocational Rehabilitation and other agencies indicate that effective staging of treatment to the point of work saves money and time for all parties concerned. The Liberty Mutual Insurance Company, pursuant to this concept, opened a Rehabilitation Center in Boston in 1943 and one in Chicago in 1951. Since the opening of the Boston Center they have treated over 2,000 severely injured patients with 84% being significantly improved by treatment and 55% returning to full time work.[1]

Other agencies are concerned with disability control. For the past 19 years a safety program has been fostered in the State of Virginia by the State-Wide Safety Conference. Their efforts have touched all walks of life ranging from home, to school, to industry. The aim of the safety program is disability control through accident prevention. However, in spite of the highly effective safety program, accidents still occur. For example, the Virginia State Industrial Commission reports 13,481 industrial accidents occurred in 1952.[2]

Similarly, the various, local, state and federal public health agencies are concerned with disability control through disease prevention, but many of our hospital beds are filled with patients who managed to elude the various preventive measures.

The safety programs and the public health programs are well established and recognized as playing fundamental roles in our daily life. The care of acute conditions has reached a level never before known. Principally because of steadily improving methods of prevention and treatment of disease and injury, we, as physicians, are largely responsible for producing the problems of geriatrics and the severely disabled. Therefore, it is the physician's responsibility to seek reasonable solutions.

Every physician is invited to consider each patient as a disability control problem. In the predominant number of cases specific definitive treatment is all that is needed. However, when it is evident that the illness or injury will be prolonged or will cause significant residual disability, the physician should establish a sustaining program to lend maximum control in limiting the degree of disability as related to the patient, his family, educability, employability and other related social-economic features. When the prognosis for the individual case warrants, the

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team should be organized early so that the motivation of the patient can be sustained through to the point of optimum end results.

It is this observer's opinion that adequate means for care of the large number of cases can be found within his own community. In a relatively small percentage of cases it may be necessary to secure assistance from special centers.

At the present time the Division of Vocational Rehabilitation has evaluation teams located in Arlington, Richmond, Newport News, Norfolk and Roanoke. These groups are made up of physicians and various paramedical personnel in each community. The purpose of these teams is to evaluate the prognosis for employability, and, when the prognosis is favorable, to outline a rehabilitation program to return disabled people to work. Physicians can secure assistance and recommendations from the team in their area if they so desire, and they can learn what services are available locally and throughout the state to meet the special needs of their patients.

In conclusion, every physician is invited to consider each case as a problem in disability control and when necessary to institute an early, sustaining rehabilitation program to the point of optimum end results. The case reported indicates how a patient with a severe back injury was returned to full time work in less than one year by effective planning.

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Radio Series Deals with Superstitions.

To show how certain old wives' tales—like the one about fish being "a brain food"—can sometimes lead us far astray and other times to actual cures for disease, the AMA's Bureau of Health Education has prepared a new radio transcription series entitled, "Supersition . . . or Science." This 13-program series will be available April 1 for broadcasting over local radio stations under the auspices of state and county medical societies.

Here is a brief rundown on some of the subjects covered in this interesting series: (1) Magic Touch —deals with such ancient notions as mad stones; (2) Nutrition Fallacies—reveals the facts regarding common foods as based on scientific investigations; (3) Quinine— shows how the use of crude cinochona bark by certain Indians led to the development of quinine; (4) Electricity and Magnetism—compares hypnotism employed by quacks and modern medical use of electronics and x-ray; (5) Cancer; (6) Goiter; (7) Anesthesia—traces the development of modern anesthesia from the days when patients were clubbed over the head with a mallet; (8) Wounds—draws comparison between old-fashioned methods of curbing infection and modern treatments; (9) Digitalis; (10) Fertility; (11) Scurvy; (12) Ephedrine. and (13) Tonics and Home Remedies.

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MAINTENANCE AND RESTORATION OF FUNCTION IN SEVERE TRAUMA*

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Definitive treatment of trauma in its early stages helps our patients. Greater strides can be noted when the problem of rehabilitation is also foremost in the mind of the attending physician from the time of injury. In short, true rehabilitation begins at the bedside or office where the physician first sees the patient. This may require only a brief reassurance to allay his mental fears, or a more detailed analysis of the patient's problem and what the future has in store for him, if he will only help. There is no truer saying than, "The Lord helps them who help themselves." To this extent the patient must be constantly reminded that he alone can move his muscles. He may need assistance in showing him how this can be done and then keep up a steady firm insistence that it must be done. Massage and various mechanical devises do not develop strength in a part unless that part itself is used by the patient.

Exercises to be effective must be strong, intermittent, and interrupted by a brief period of relaxation, so the muscle may recover by receiving nutrition and oxygen and by eliminating waste products. A muscle held in a prolonged state of contraction tends to fatigue and atrophy. He may safely exercise a part if he experiences neither excessive pain or fatigue. Exercises should start within 24 hours after surgery or trauma. Any operation or illness which confines a patient to bed leads to rapid atrophy or loss of muscle tone.

Massage and passive motion at the bedside is usually an initial step toward rehabilitation. Daily passive motion of affected joints is important in preventing contractures as well as placing these parts in their proper posture. This is soon followed by assistive and then resistive exercises.

For many years great strides have been made in starting early rehabilitation of the injured parts. For instance, the fractures of the upper humerus are now seldom treated by the cumbersome shoulder spica. A hanging cast or some form of metal fixation is used so that early mobility can be done. These exercises are first done in the dependent position and then later in wall climbing or overhead pulley exercises. One of the commonest and most disabling disabilities is the simple Colles' fracture in an elderly lady. Early and sustained exercises must be done with their fingers. They must also be told to move their shoulder and not to keep their arm constantly close to their body or they will develop a causalgia of their shoulder that progresses on to a fibrous ankylosis or frozen shoulder. This disability may be more troublesome than the original injury.

In cases of fractures of the femur and tibia intramedullary nailing is now frequently employed. This allows early ambulation and use of the adjacent joints. This certainly is a great advance over the uncomfortable hip spica. Other forms of internal fixation of fractures are also being used for this same purpose.

In cases of a fractured spine which is being treated by a plaster body cast, we start early exercises for the back. These can be done by the patient chinning himself several times a day.

Following operations on the knee, it is quite important to start early exercises for the quadriceps muscle. It is this muscle when strong that keeps the patient's knee from giving way as he steps forward.

Early ambulation following surgical abdominal procedures keeps up the tone of the patient's musculature. This early ambulation can be done following surgical treatment for a ruptured spleen, or urinary bladder, or intestine. You would probably be a little more cautious about early ambulation in a ruptured liver.

Following burns, as soon as the skin looks healthy and even when skin grafting is done, motions should be started in 10 days to prevent contractures. Also, some surgeons start early motion in repaired tendons of the fingers. This must be done with discretion.

The traumatic or orthopedic surgeon must be the dominant or guiding influence to his patient in his rehabilitation. He is the one person cognizant of the patient's attitudes and the goal he is seeking.

*Read as a part of the Rehabilitation Symposium at the annual meeting of The Medical Society of Virginia, at Roanoke, October 18-21, 1953.

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The procedures needed to obtain the final result should be dictated by the attending surgeon, as he is fully aware of all the conditions existing in his particular patient.

Rehabilitation if not started early is either a useless procedure, or at best only obtains a poor to fair end-result. Often, it is very advantageous to call in various consultants, such as internists, orthopedists, or psychiatrists.

In various locations these different branches of medicine have organized into rehabilitation teams. Where such teams have been set-up the best talents have been able to obtain excellent early and final rehabilitation. Included in this concept has been the utilization of a Work Shop or Vocational idea. These means keep the patient stimulated and prevent a mental lapse on his part, and at the same time it has a definite therapeutic value. It can keep a disabled part working. This, then, is a real Maintenance and Restorative Service in returning the patient to normal activities.

I feel sure that you already know all of the mechanical means of rehabilitating your patients, but let me again emphasize the importance of the initial reassurance or psychological approach to the patient regarding his condition when you first see him. State the facts, but, at the same time, don't hang the crepe on him, so that he will not be able to overcome his physical with an added mental handicap.

343 Wainright Building.

New Books.

We give below names of some of the new books in the Tompkins-McMcCaw Library of the Medical College of Virginia, Richmond. These are available to our readers under usual library rules.

Abramson—Somatic and psychiatric treatment of asthma. 1951.

American Psychiatric Association—Psychiatry and medical education. 1952.

Andrews—Attitudes toward giving. 1953.

Antibiotics annual, 1953-54. 1953.

Bourgoyne—Surgery of the mouth and jaws. 1949.

Cannon—Bodily changes in pain, hunger, fear and rage. 2nd edition, 1949.

Ciba Foundation—Colloquia on endocrinology: Bioassay of anterior pituitary and adrenocortical hormones. Vol. 5, 1953.

Ciba Foundation—Colloquia on endocrinology: Hormonal factors in carbohydrate metabolism. Vol. 6. 1953.

Ciba Foundation—Colloquia on endocrinology: Synthesis and metabolism of adrenocortical steroids. Vol. 7, 1953.

DePalma—Diseases of the knee. 1954.

Dorfman and Unger—Metabolism of steroid hormones. 1953.

Dubos and Dubos—The white plague. 1st edition, 1952.

Homburger and Fishman—The physiopathology of cancer. 1953.

McCarty—Streptococcal infections. 1954.

Morton—U. S. Army in World War II, War in the Pacific, the fall of the Philippines, 1953.

O'Malley—Michael Servetus. 1953.

Parsons and Ulfelder—An atlas of pelvic operations. 1953.

Report to the President by Commisison on Health Needs—Building America's Health.

Waldbott—Contact dermatitis. 1953.

Willis—Pathology of tumors. 2nd edition, 1953.

Zimmerman and Anson—Anatomy and surgery of hernia. 1953.

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COMPLICATIONS IN SURGERY, DUE TO ABNORMALITIES IN BLOOD VOLUME, WITH SPECIAL REFERENCE TO THE SYNDROME OF POLYCYTHEMIA*

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The tremendous changes that have occurred in medicine and surgery during the past twenty years have given us many new problems.

The application of the new concepts of fluid balance,[1] protein and iron metabolism, are most important to the modern surgeon. With the advent of the Blood Bank, the replacement of 2000 c.c. or 3000 c.c., or even 4000 c.c. of fluid blood, is not rare.

The general surgeon or the specialty surgeon will accept poorer risks, because he can take care of them.[7] He will perform more radical surgery, and often obtain better results than did his father or senior associate. Operations lasting eight or nine hours, under general anesthesia are not uncommon. Patients eighty or ninety years of age are daily seen in our operating rooms.[7]

I am sure you will all agree that the important factors in today's surgical armamentarium are:

1. The facility of using blood and blood replacements.
2. The improved anesthetics and the existence of the American Board of Anesthesiology.
3. The use of antibiotics.

Using these new concepts as a foundation, I am going to ask that you consider the importance of the new conception of polycythemia as a syndrome.[3,4,5]

Polycythemia formerly was considered a rare medical disease. If a surgeon ever noted polycythemia he referred it to a medical colleague for treatment.

The new concept that has been impressed on us, in the operating room by the anesthetists, and in the office in the treatment of ocular thromboses, is that polycythemia is a syndrome, and that the syndrome occurs in approximately 20% of all the surgical patients, and 70% who have hematocrits of 50% and over—Tables 1-2.

Why should we as surgeons be concerned with the syndrome of polycythemia? In the first place, polycythemics are bleeders. If you enjoy doing neat technical surgery, you want to control the hemorrhages by every means possible, and if you can prevent undue hemorrhage, you will be able to devote all your attention to the prime reason for which you are operating.

Delayed hemorrhage may spoil all your good work, too, so it behooves the alert surgeons to prevent it, when possible, by recognizing the polycythemic state *before* surgery, and normalizing his patients' blood volume, just as he would if there existed an anemia, with a deficit in blood volume. Polycythemia is as

Table 1.

The Syndrome of Polycythemia

1. Polycythemia Vera
2. Relative Polycythemia due to
   a. Altitude changes
   b. Dehydration
   c. Over transfusion
   d. Cardia disease
      1. Congenital hearts
      2. Decompensated hearts
   e. Lung disease
      1. Malignancies
      2. Emphysema
   f. Over-eating and drinking

Table 2.

Barbour's Table

Clinical Classification

450 patients with hematocrits of 50 or above
346 patients or 75.4 per cent had absolute polycythemia
A. Polycythemia vera B. Secondary polycythemia
C. Artificial polycythemia
113 patients or 24.6 per cent had hemoconcentration (relative polycythemia)

Incidence of Absolute Polycythemia

With hematocrit 50-54 (320 patients)—
223 or 70 per cent had absolute polycythemia
With hematocrit 55-60 (100 patients)—
85 or 85 per cent had absolute polycythemia
With hematocrit 60 plus (39 patients)—
38 or 97.4 per cent had absolute polycythemia

Absolute Polycythemics with 1,000 cc. or More Excess of Red Cell Volume

With hematocrit 50-54 (320) patients—
50 patients or 15.6 per cent.
With hematocrit 55-59 (100 patients)—
34 patients or 34.0 per cent
With hematocrit 60 plus (39 patients)—
37 patients or 95.0 per cent.

*Read before the Virginia Academy of Medicine, Section Eye, Ear, Nose and Throat, Richmond, Virginia, December 1, 1953.

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important as anemia; it represents the opposite picture—Tables 3-4.

TABLE 3.

NORMAL 4000-5000 c.c. BLOOD VOLUME	
Anemia	Polycythemia
Deficits	Excesses

The hematocrit can mask anemia as proven by Clark and associates. It also masks a polycythemia, as proven by our investigations. Use the hematocrit because of its simplicity, but do not trust it. Look at the retinal veins for engorgement and cyanosis, but when you want an accurate answer, get a Blood Volume determination.

Various surgical specialties will be more concerned with hemorrhage than the general surgeons. In the field of ophthalmology, for instance, a small hemorrhage in the eye is often a serious complication, while in general surgery, having the blood bank available, hemorrhage may be less serious as a complication factor.

Thromboses and emboli are one of the grave complications that all surgeons wish to avoid, and we have evidence that polycythemics are subject to thromboses to a much greater extent than are people with normal blood volumes—Tables 5-6.

Thromboses may occur after any operation, but they often occur after operations on patients who have varicose veins.

Note the incidence of surgery to obliterate varicose veins. But how many surgeons inspect their patients for excesses in blood volume—even in cases that have varicosities? We have carried many elderly patients with varicose veins and localized leg thrombi

TABLE 5.

CAUSE OF DEATH IN THIRTY-TWO PATIENTS WITH PRIMARY POLYCYTHEMIA

Thrombosis	Number	Percent
Coronary	8	25
Mesenteric	3	9.4
Hepatic	1	3.1
Hemorrhage		
Cerebral	3	9.4
Gastrointestinal	3	9.4
Chronic myelogenous leukemia	4	12.5
Malignant tumors	4	12.5
Peritonitis	2	6.2
Others	4	12.5

(Stroebel, C. F., Hall, B. E., & Pease, G. L.)

This table deals only with true polycythemia. All forms of polycythemia—the syndrome—have similar incidences of thromboses and hemorrhage.

The importance of the syndrome to the surgeon is evident. It must be recognized.

TABLE 4.

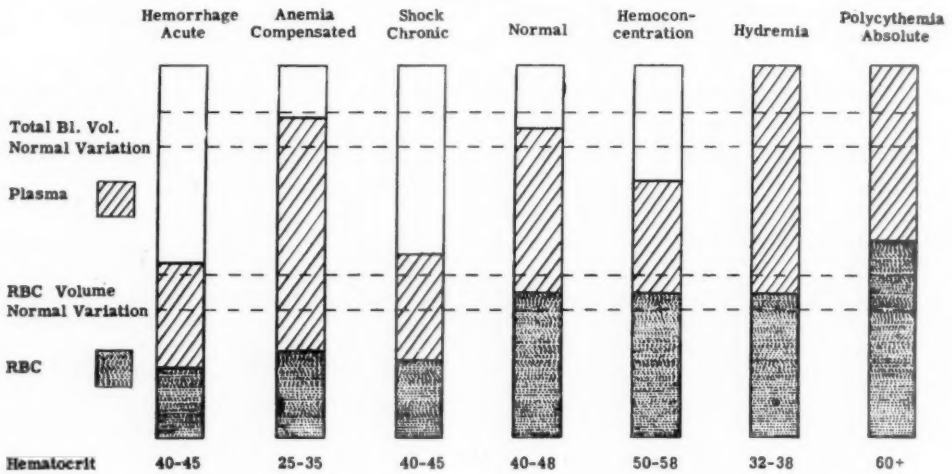

TABLE 6.

THROMBOSES-POLYCYTHEMIA VERA

(Burris, M. B. & Arrowsmith, V. R.[5])

68 adult patients with proven polycythemia vera
23 vascular complications (20 males)
8 thrombo-phlebitis with no antecedent trauma
5 peripheral arterial disease
5 cerebral thromboses
3 myocardial infarction
2 thromboses of the hepatic vein
4 developed thrombosis following treatment with P32.

through cataract and other eye operations by normalizing the blood volume before surgery.

Thromboses or emboli are a hazard not only to the surgical patient, but also to the surgeon himself. Here are some figures that illustrate the importance of the hematocrit in excesses and deficits of blood volume—Tables 7-8.

Table 7.

Total deaths, all causes, 1949 vital statistics, U.S.A.	1,443,607
Total deaths from diseases of cardio-vascular-renal system	746,434
Total deaths from hypertension	96,007
Incidence of true polycythemia in N. J. compulsory sickness insurance 1949-1951	2 in 41,000

Table 8.

The Connecticut Mutual Life Insurance Company

	1949	1950	1951	1952
Cerebral hemorrhage, thrombosis	158	228	218	191
Diseases of the circulatory system	951	1017	1025	1192
Coronary disease				
Degenarative and infectious heart disease				
Other diseases of circulatory system				
	1109	1245	1243	1383

In the corresponding years we issued approximately 37,942 policies in 1949; 40,504 in 1950; 39,679 in 1951; and 41,594 in 1952. The percentage relation of deaths to policies issued in 1949 is 2.9%; in 1950, 3%; in 1951, 3%; and in 1952, 3%.

Deaths from this category make up our heaviest mortality class.

Vascular disease is one of the great problems in medicine today. Every physician, in his office as well as in the hospital, has it within his power to markedly reduce the number of deaths and disability from thromboses by merely making the diagnosis of the polycythemic syndrome.

The diagnosis of the polycythemic syndrome can be suspected from the history and appearance of the patient—Table 9.

Table 9.

The Polycythemic Syndrome

History

1. Dizziness
2. Pains in legs on exercise
3. Feeling of fullness in head

Often the florid faced over-weight person is a borderline polycythemic.

Given a real hot spell and inadequate fluid intake, this person will become a dangerous relative polycythemic, subject to all the complications of excessive blood volume.

The same reaction occurs in the Denver area where people who live at high altitudes come down to much lower altitudes for hospitalization. It also occurs in vomiting and with other causes of dehydration. It may occur locally, as with a tourniquet, or dependency.

We must be aware of all forms of the polycythemic syndrome.

The surgeon must avoid general anesthesia on polycythemics because they present a typical difficulty to the anesthetist. Operating table fatalities due to unrecognized polycythemic states are common.[3]

The surgeon who wants smooth pentothal anesthesia must normalize the blood volumes of those patients who are on the excess side. This is especially true in eye surgery where anesthetic difficulties may cause the loss of the eye.

In summary, any form of polycythemia may cause:

1. Hemorrhage
2. Thrombosis
3. Anesthetic deaths
4. Difficulty with surgery
5. Difficulty with convalescence—Table 10.

Table 10.

Complications Due to Polycythemic Syndrome or Excessive Blood Volume

1. Hemorrhage
2. Thrombosis
3. Anesthetic deaths
4. Difficulty with surgery
5. Difficulty with convalescence

The diagnosis of polycythemic states should be suggested to the surgeon by the history and appearance of the patient, but consideration of the hematocrit, the Hbg., and the RBC will also give an indication.

Too many patients are admitted to hospitals one night and operated the next morning, often without consideration of these blood factors. While the hematocrit is valuable, it does not tell all and is often confusing and we must, therefore, use blood volume reports for best results.

Formerly, a hematocrit of 50% was considered normal. In our experience we have come to believe that the complications of polycythemic states are

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not to be avoided unless the hematocrit is kept at not over 44% for females and not over 48% for males..

It would be safer to have blood volume determinations on all cases over those levels.

The diagnosis of the polycythemic state or syndrome is simple and accurate, when the blood volume test is used.

We have been using the "Evans Blue" Dye method in our hospital laboratory—Tables 11-12.

TABLE 11.

EVANS BLUE DYE
CALCULATION

1. Total plasma volume—ml. of dye solution injected (5.0 ml.)
$$\frac{\times \text{Dilution of standard (500)} \times \text{optical density of standard}}{\text{Optical density of Dye—tinged plasma (unknown)}}$$
2. Total blood volume $= \frac{\text{Total plasma volume}}{1 - (.96 \times \text{hematocrit})}$
3. Red cell volume = total blood volume — total plasma volume
4. Total plasma protein = conc. of plasma protein (gms. %)
$$\frac{\times \text{ plasma volume}}{100}$$
5. Total circulating hemoglobin = hemoglobin reading (gms. %)
$$\frac{\times \text{ blood volume}}{100}$$

The new concept that we are proposing to you emphasizes the importance of the excesses of blood volume, and should materially aid in combatting complications from all forms of vascular disease including hypertension, arteriosclerosis, diabetes, as well as thromboses. The polycythemic syndrome is easily diagnosed by blood volume estimation, and quickly and easily normalized by the proper phlebotomy or intravenous fluid administration.

The treatment of the polycythemic syndrome by the surgeon will always be by phlebotomy in the preoperative and convalescent stage, with draining 250 c.c. to 500 c.c. daily or every other day—depending on the patient's health.

For long term treatment the surgeon may wish to refer his patient to the hematologist for treatment with the radio-active isotopes.[6] Most hematologists are using a phosphorus compound called P32, which loses an atom and breaks down to a stable form of phosphorus. The action of this isotope is, of course, on the bone marrow and controls the formation of excess red blood cells, platelets, etc.

Some individuals with relative states of polycythemia can control their diet and attain a more normal blood volume; others will prefer phlebotomy, if not required too often.

TABLE 12.

METHOD OF REPORTING

NAME_____ WARD_____ SIGNATURE_____
CONCLUSIONS:

	HEMATOCRIT	PLASMA	PROTEIN			WEIGHT	
				Women	2.90 + .30 GM/k	Excess	GM
Blood Volume	Total Plasma Protein	GM/k	Normals:	Men	2.95 + .35 GM/k	Deficit	
				Women	40 + 4 CC/k	Excess	
DATE	Plasma Volume	CC/k	Normals:	Men	42 + 5 CC/k	Deficit	CC
				Women	28 + 3 CC/k	Excess	
Hist. No.	RBC Volume	CC/k	Normals:	Men	35 + 4 CC/k	Deficit	CC
				Women	68 + 6 CC/k	Excess	
	Total Blood Volume	CC/k	Normals:	Men	76 + 8 CC/k	Deficit	CC

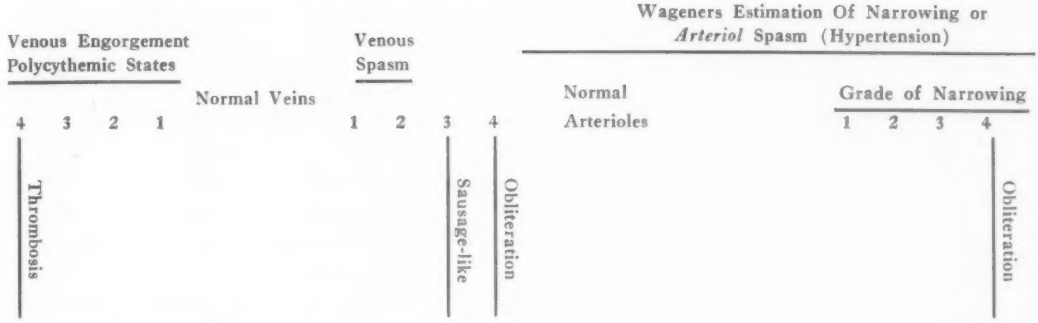
The use of blood volume testing began in 1915, but came to be recognized as of greatest importance in 1947 when Clark and associates developed the theories of "chronic shock", noted especially in individuals with chronic infections or malignant disease, and masked by apparently normal hematocrit value.

One last factor in the diagnosis of polycythemic state: the diagnosis should be suggested from the appearance of the retinal veins. Just as the ophthalmic diagnosis and prognosis is of value in hypertensive states based on the spastic status of the retinal

Table 13.

A Grading Table
of
Vascular Disease
as seen
with the Ophthalmoscope

NORMAL
V — A
1 — 2/3



arterioles, so also the retinal veins offer an excellent method of estimating venous engorgement and cyanosis, and may be used to assist in the diagnosis of the polycythemic syndrome—Table 13.

Summary

1. We have emphasized the importance of polycythemic states in relation to vascular disease, especially in surgical patients.
2. The recognition of the polycythemic syndrome by means of the blood volume determination offers surgeons both a diagnostic, as well as therapeutic weapon, which can be used to prevent vascular complications.

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PANEL DISCUSSION ON THE TREATMENT OF MALIGNANT LYMPHOMA

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Introduction

BY

BYRD S. LEAVELL, M.D.

Various diseases are included under the term "malignant lymphoma" because these diseases involve the same structures in the body, the clinical courses of the diseases are similar, and the outcome is ultimately fatal in each case. As it is used generally, the term "malignant lymphoma" includes the following:

1. Hodgkin's Disease.
2. Giant follicle lymphoma or "Brill-Symmer's Disease".
3. Lymphosarcoma, either reticulum cell or small cell.
4. Leukosarcoma.
5. Lymphocytic leukemia.

Although there are numerous exceptions, the clinical course of the diseases usually covers a period of two to three and one-half years after the onset of symptoms, except in the case of giant follicle lymphoma where the survival time is longer.

Various methods of treatment have been employed in these diseases. These include radiation therapy in the form of radium, x-ray, and radioactive phosphorus, and chemical compounds such as urethane, nitrogen mustard, and triethylene melamine. Cortisone and ACTH are also employed on occasions. It is certain that none of these forms of treatment has produced a cure of these diseases. It is not certain whether treatment has prolonged the average life span in any group, but unquestionably treatment has been life-saving in some individuals. Treatment has made others much more comfortable and has enabled them to lead a more active life. In a few patients undesirable reactions to treatment have been responsible for death of the patient.

There are many questions that arise in handling patients of this type. How can we make a diagnosis? What is the best form of treatment to use initially? Do we treat all patients in the same manner? When do we give subsequent courses of therapy? As a background for considering these and many other questions we have asked several speakers to discuss different aspects of this problem. Dr. Cash, a Pathologist will give his ideas of the nature of these diseases and discuss some of the difficulties encountered in making a diagnosis. Dr. Barker, a Roentgenologist will discuss radiation therapy and Dr. Tucker, an Internist will summarize the place of chemotherapy.

Remarks on Lymphoma

BY

JAMES R. CASH, M.D.

Since neither the etiology nor intimate nature of Hodgkin's Disease, lymphosarcoma or variant forms of these conditions is known, it is not surprising that it has proved difficult to recognize each of these conditions with accuracy on the basis of the morphology of its lesions.

Epidermoid carcinoma has a characteristic appearance by which the disease can be recognized with a high degree of accuracy. The demonstration of tubercle bacilli in lesions varying from acute necrosis with hemorrhage to calcification allows us to identify the most divergent and dissimilar alterations of tissues as tuberculous. There is no such favorable relationship of the changes observed in the various elements of lymph nodes to those diseases which affect them. Here we observe, without knowledge of the cause, hyperplastic phenomena of lymphocytes, cells of germinal centers, reticulum, reticulum cells, fibroblasts and endothelium occurring in varying degrees at varying rates of speed. Other elements

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of the blood often appear for reasons of their own. The picture presented by one of these conditions frequently resembles or overlaps another. It is therefore not surprising that so many mistakes in histological diagnosis are made that many physicians now tend to think of all of these diseases as a large, closely related family whose members cannot be identified as individuals.

To deny a relationship among the diseases loosely classed as lymphomas would indeed be foolish, since our knowledge of their true nature is so slight. My own experience, however, leads me to believe strongly that each of these diseases possesses its own characteristic form, often varying widely in different areas of the body and at different times in its course, which can be recognized by those who are familiar with these variations and will base their final opinion upon a careful correlation of all facts which can be learned about each case rather than upon the histological study of a lymph node alone. When dealing with diagnoses of the lymph nodes it should be realized that nothing can be more misleading than a microscope when left to its own devices.

We have good reason to believe that Hodgkin's Disease and the various forms of lymphosarcoma begin in a lymph-node, group of lymph-nodes, or forms of lymphoid tissue in an organ of the body. In a few cases the disease remains localized long enough to be discovered and removed, though most cases spread in varying degrees at varying rates of speed to adjacent lymphoid structures and organs. In its oldest focus the disease in question has a characteristic form by which it can be recognized in most cases. However, this is the area of disease least often removed for diagnosis. Failure to appreciate the fact that early changes, causing enlargement of glands far removed from the older, well developed lesions, may not yet have assumed their characteristic form leads to many errors in diagnosis.

For example, the early proliferation of lymphocytes in Hodgkin's Disease may so predominate the picture that the true granulomatous character of the lesion is overlooked and an erroneous diagnosis of lymphosarcoma is made. It is therefore essential that a thorough clinical investigation of the extent of disease be made in each case, a gland as near possible to the site of the origin be removed for study and that due consideration be given to all of the clinical facts in interpretation of the histological characteristics of the gland which was removed.

Radiation Therapy of Lymphoma

BY

Allen Barker, M.D.

For the purpose of this discussion, the following classification which is simple, yet adequate, will be used:

1. Hodgkin's Disease.
2. Lymphosarcoma.
   (A) Lymphocytic.
   (B) Reticulum Cell.
   (C) Giant Follicle.

Because of their similar clinical evolution, their consideration by many as variants of the same disease and the identical therapy required for all, this group of tumors will be discussed together rather than individually. Despite the wide differences of opinion regarding the nature, prognosis and response to therapy of the malignant lymphomas it can be stated without much argument that radiation therapy yields better results in some forms of lymphomas than in others and that the stage in which the disease is found at the time therapy is instituted is a tremendous and the most important factor in the prognosis.

For the purpose of formulating a therapeutic attack and attempting to establish a prognosis in the individual case, I classify the disease in stages as follows:

Stage I. Involvement of only one node or one group of lymph nodes.

Stage II. Involvement of two or more lymph node groups with excellent general condition of the patient.

Stage III. Widely disseminated disease with fever, malaise, anorexia, and generally poor condition of the patient.

The use of radioisotopes in the treatment of malignant lymphomas is mentioned only to discourage as they offer nothing which cannot be accomplished with roentgen therapy and their use is far more hazardous.

Many of the failures of roentgen therapy in the treatment of lymphomas, especially in Stages I and II, can be attributed directly to inadequate dosage. Because of the extreme radio-sensitiveness of most of these tumors, it is unfortunately common practice to give small doses, often not over 100r to the involved glands with no treatment to the adjacent node bearing areas. Nodes treated in such a manner will regress to normal only to recur early along with a spread to distant sites. Thus a golden opportunity

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to control the disease for a long period, sometimes for years, vanishes with the first timid attack.

Stage I, of the disease gives the most favorable prognosis, but treatment must be directed not only to the involved nodes but to adjacent node bearing areas and dosage must be heavy, 2500-3500r, to each area. For example, treatment of a localized node or nodes in the neck must be supplemented by an additional port to the supraclavicular nodes on the same side. With nodes in both the cervical and supraclavicular spaces, the mediastinum must be attacked. If the disease is localized to femoral or inguinal glands then the adjacent iliac fossa must be thoroughly radiated. The size of the treatment fields must be large enough to include all of the disease bearing area with a considerable margin of normal tissue. Generally one can administer safely 2500 r to a 15c15cm. field and 3500 r to a 10x10cm. field if treatment is given in increments of not more than 300 r daily and the fields treated on alternate days. This dosage will almost invariably sterilize the area and recurrences, often delayed for many years, will be at a distant site. The so-called segmental radiation, that is the treatment of all gland bearing areas throughout the body, in addition to the local diseased area, I do not believe is indicated as it subjects the patient to too much radiation and there is no undisputed proof that such treatment improves the survival rate.

Stage II of the disease is treated in the same manner as is Stage I with the addition of the necessary number of fields to include all the diseased areas and their adjacent nodes.

The treatment of Stage III of the disease requires the closest collaboration of the radio-therapist and clinician. Critical judgment must be exercised in the choice between chemotherapy and radiation. Many of these patients do not respond to any form of therapy. Others exhibit poor tolerance to radiation of multiple fields such as is required in the widespread disease, but not respond in some instances to chemotherapy or a judicious combination of the two. A careful appraisal of the initial response to the form of treatment used is necessary to determine the future course of treatment. Even then it is often necessary to revise completely one's original ideas in the individual patient. Total body radiation would at first seem to be the logical approach to the widely disseminated disease but the human, like animals, does not tolerate such radiation well and the small safe daily doses which should not exceed 15 to 25 r and this for only a short period, are insufficient to destroy even the most radiosensitive tumors. If one adheres to the theory of palliation in lymphomatous diseases, then it should be confined to this group in which many of the rapidly progressive, fulminating cases do not respond to any form of therapy.

While the prognosis in malignant lymphomas is generally poor, aggressive therapy in Stages I and II of the disease does greatly increase the five-year survival rate and there have been many reports of survival as long as 15 and 20 years.

Peters[1] recently reported a series of 113 patients with Hodgkin's Disease with a five-year survival rate of 88% in the Stage I and 72% in Stage II, while in Stage III, there was only 9% five-year survivals. Such an enviable record has not been previously reported and while it has been criticized it does emphasize that early diagnosis and aggressive treatment make this disease much less hopeless than is generally recognized.

Radiation therapy of the leukemias is a palliative measure only to be judged almost entirely by the patient's symptoms and, therefore, a discussion of their treatment was omitted from the group of lymphomas described above.

The acute leukemias, especially in children, are often catastrophic in their progress and radiation is generally contraindicated. If used at all it must be employed with extreme caution.

There is a wide difference of opinion as to whether roentgen therapy prolongs the life of leukemic victims but it does have much to offer in making these people more comfortable. The large masses of lymph nodes frequently seen in chronic lymphatic leukemia can be reduced with remarkable speed with external radiation but the doses must be small, usually not over 100 r, and subsequent therapy treatment dictated by the patient's general condition and the response of his red cell and leukocyte count. Further treatments are guided by the degree of enlargement of the spleen, lymph nodes, blood count and the patient's general condition.

Because of the systemic manifestations and hyperplasia of the bone marrow in patients with chronic

1. Peters, M. Vera. Study of Survivals in Hodgkin's Disease Treated Radiologically. Am. J. Roentgenol. & Rad. Therapy, **63**: 299-311, 1950.

myelogenous leukemia total body radiation would seem to be the logical approach to this disease but this method is hazardous and is no more effective than local radiation of the spleen. The tremendous enlargement of the spleen and the high white count, so common in these patients, are often reduced to comfortable levels with one treatment of not more than 100 r to the spleen. As in lymphatic leukemia, subsequent treatments are guided by the general response of the patient and by the decrease in white count and the size of the spleen. The effect of each treatment should be checked by white counts before further radiation and the white cell level not forced too low. Radioactive phosphorus has been used in the treatment of chronic myelogenous leukemia with good temporary results but it is much more hazardous than x-ray and should not be used as a substitute for properly employed roentgen therapy.

In general it can be said there are no definite criteria for the treatment of leukemia. Each case must be treated individually and as long as he is in good general condition, comfortable, and without extremely high white count, he should be left alone.

Chemotherapy of Lymphoma

BY

H. St. George Tucker, Jr., M.D.,

While irradiation continues to be the mainstay of our treatment of the malignant lymphomata, certain chemotherapeutic agents have a well established place in the management of these diseases. In this presentation we shall discuss the two cytotoxic agents, nitrogen mustard (HN_2) and triethylene melamine (TEM) and the two hormonal preparations, ACTH and cortisone.

At the onset it may be said that none of these agents has effected a cure in any of these diseases. Nevertheless, their use may bring about very marked symptomatic improvement and in some cases may prolong life.

Nitrogen mustard, given intravenously, and TEM, the oral preparation, are quite similar in many respects. Both release in the body powerful chemical substances which exert a destructive effect on lymphomatous tissue wherever it is present. Both likewise produce serious bone marrow depression which strictly limits the dose of either that can be given. Neither is suitable for the treatment of early lymphomatous disease confined to a few nodes where local irradiation is preferable. Both have their chief usefulness in the advanced case with widespread involvement of lymph nodes or where severe systemic symptoms such as fever, malaise, anorexia, and weight loss are present. In such cases the administration of either nitrogen mustard or TEM may produce a very gratifying remission with subsidence of all symptoms and resolution of lymph nodes throughout the body. Both are most effective in Hodgkin's disease and somewhat less so in lymphosarcoma and reticulum cell sarcoma. TEM may be somewhat more effective in lymphosarcoma than is nitrogen mustard. The clinical response is more rapid following nitrogen mustard, improvement being evident within a day or two, whereas a week or more may be required for similar benefit from TEM.

The duration of remissions produced by these two agents is also similar. Remissions may last only a few weeks or several months, depending on the rapidity of progression of the underlying disease process. Attempts have been made to prolong the state of remission with maintenance doses of TEM, but such programs carry considerable risk of dangerous cumulative damage to blood forming tissues and are probably unwise. With both nitrogen mustard and TEM we prefer to repeat the course of treatment only when symptoms return. Each relapse may be retreated as long as blood studies show an adequately functioning bone marrow. Unfortunately as the disease progresses, successive courses of treatment are likely to be less and less effective and the bone marrow often shows cumulative depression so that the number of courses given is usually limited.

Nitrogen mustard is given only by the intravenous route, the freshly dissolved dose being injected into the tubing of a running saline infusion. Dosage schedules have been clearly defined by wide clinical experience. The total dosage for one course should not exceed 0.4 mg. per kilogram of body weight whether given in divided daily doses or as a single injection. Following even the smaller doses nausea and vomiting occur regularly in a few hours. The gastro-intestinal reaction can be lessened but not prevented by heavy sedation and atropine. The effects of bone marrow depression appear in about two weeks with leukopenia, neutropenia, and some drop in platelets. These are usually not extreme and blood counts will usually be restored to normal limits in three or four weeks.

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TEM is dispensed as a 5 mg. scored tablet. Dosages have varied more than with nitrogen mustard. 2.5 to 5.0 mg. is given daily over two to six days, the usual total dose being 10 mg. to 20 mg. If blood counts are satisfactory two weeks later, an additional 5 mg. or occasionally 10 mg. can be given. The tablet is best taken on arising, on an empty stomach, with food withheld for the next two hours. The taking of sodium bicarbonate 2 mg. with each tablet is said to facilitate absorption. The gastro-intestinal reaction is much less severe than with nitrogen mustard. Some nausea occurs in about half the patients taking TEM, but vomiting is infrequent. Toxic effects on the bone marrow are similar to those with nitrogen mustard, but are less predictable and are apt to be more severe and more prolonged. The greatest depression of leukocytes usually occurs two to three weeks after treatment. Platelet depression is more severe than with nitrogen mustard and may persist for two months or more. The latter constitutes one of the distinct hazards of prolonged TEM therapy.

The greatest advantage of TEM is that it can be given by the oral route and produces less nausea and vomiting. It allows ambulatory patients to be treated in the office or home without hospitalization. The risk of marrow depression is greater than with nitrogen mustard, particularly with repeated courses. For the severely ill patient, nitrogen mustard is generally preferred because of the more prompt relief of symptoms.

ACTH and cortisone are useful mainly in the very advanced stages of these diseases where all other measures have failed. Patients with widespread lymphoma and severe symptoms, who no longer respond to irradiation or to nitrogen mustard or TEM, or in whom these agents are contra-indicated by pancytopenia, may show striking clinical improvement with either ACTH or cortisone. Fever, pain, and other symptoms may be relieved and a feeling of well-being restored. We have seen shrinkage of lymph nodes and spleen and disappearance of ascites. Unfortunately this improvement is only temporary and sooner or later the manifestations of the disease return in spite of continued administration of the drug. It is likely that most of the improvement with ACTH and cortisone represents merely blockage of the harmful effects of the disease on the body. If any inhibition of tumor growth is accomplished, it is only temporary and soon overcome. It is possible that this delaying action type of treatment might allow time for regeneration of a depleted marrow and restoration of blood counts. If this occurs, irradiation or other definitive treatment might again be given with more lasting benefit. Otherwise, the effects of ACTH and cortisone must be regarded as largely palliative.

Summary

BY

BYRD S. LEAVELL, M.D.

Dr. Cash has made clear his point of view that the diseases which are grouped in the term of "Lymphoma" are in reality separate entities. At times accurate diagnosis from a biopsy specimen may be exceedingly difficult or impossible and repeated biopsies are necessary. It is desirable to obtain a biopsy as near as possible to the original site of the disease, before treatment is administered. The clinical facts of the case should be considered along with the histological appearance of the node in reaching a conclusion.

Dr. Barker has classified the diseases according to extent and severity. Recognition of these three stages is a great help in estimating the prognosis and formulating the methods of treatment in the individual patient. Dr. Barker, Dr. Tucker and the other member of the panel appear to be in agreement as to the principles of therapeutic management. Surgical removal of disease of the gastro-intestinal tract and very localized superficial cervical nodes should be tried. Irradiation appears indicated as the initial treatment of patients with a single group of nodes. It is also the treatment of choice in patients with involvement of several groups of nodes if the general condition of the patient is good. The mustards are used in patients with disseminated disease. They are seldom used in relatively localized disease unless there is some reason for not using irradiation. Cortisone and ACTH are used mainly in the very advanced forms of the disease when other measures have failed. The dangers of treatment have been emphasized. All of our discussors agree that after the initial course of therapy the patient should be followed periodically, but further treatment is withheld until there is evidence of recurrence of the disease.

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CLINICOPATHOLOGICAL CONFERENCES
of
The Medical College of Virginia Hospital

Prepared and Edited by
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Case #97

A 45 year old, colored, male slaughter-house worker was admitted to St. Philip Hospital on September 6, 1951. His history is best outlined in the following summary of his previous admissions:

First Admission, April, 1935: Patient admitted because of a complete fracture of the right mandible from a blow. Following wiring, an abscess developed which was drained.

Second Admission, April, 1936: Admitted because of chronic osteomyelitis of the right mandible. At this time the 1st and 2nd right bicuspid teeth were extracted and the mandible curetted.

The patient was followed in the Outpatient Clinic for a few months thereafter and the mandible healed. He was treated for acute gonorrheal urethritis late in 1936 and was then not seen again until November, 1947, when he was examined in the Medical Clinic because of pain and stiffness in his hands, wrist, elbows, shoulders and knees of about seven months' duration. He also gave a history of recurrent swelling in both parotid areas for several years. He was found to have generalized lymphadenopathy, some stiffness in the affected joints, and swelling of the interphalangeal joints. Sedimentation rate 25 mm. per hour. Total proteins 7.5, albumin 3.0, globulin 4.5. X-rays showed rarefaction of the distal ends of the metacarpals and phalanges with some narrowing of the proximal interphalangeal joints. He was then treated symptomatically until

Third Admission, April, 1949: He was admitted to the hospital with acute swelling of the right parotid gland and a temperature of 103. The right parotid gland was orange-sized and tender, the left parotid slightly swollen but non-tender. Generalized lymphadenopathy was again noted. Joint symptoms were still present and x-rays now showed definite absorption of the terminal ends of the distal phalanges. Chest x-ray showed generalized cardiac enlargement with a CT ratio of 57%. Total proteins 8.5, albumin 2.5 and globulin 6.0. 1:1,000 OT positive. During this admission a transient pericardial friction rub was noted with EKG changes suggestive of acute pericarditis. Biopsies of several lymph nodes were reported as chronic lymphadenitis. The temperature gradually subsided under streptomycin and pencillin therapy and the parotid swelling and tenderness were markedly reduced. He was discharged improved after thirty-five days.

Fourth Admission, October, 1950: Admitted with another acute episode of right parotid swelling with fever. An abscess was suspected but repeated aspirations did not reveal pus. He again responded to antibiotics and local heat. X-rays of the facial bones showed no definite abnormalities, but chest x-rays showed further cardiac enlargement with a CT of 61%.

Fifth and Final Admission was in September, 1951, primarily because of cough and shortness of breath which had developed about ten months earlier and had become progressively worse. Cough was productive of a half-cup of foamy white sputum daily. The patient complained of a "filling up" in his left chest and stated that for several months he had had to lie on his left side when reclining. He had lost 10-15 pounds in weight and his appetite had recently become poor. He had continued to have joint pains and frequent, but less severe bouts of parotid swelling bilaterally.

Family history, systems review and past history were otherwise of no significance except that the patient had been treated for syphilis in 1931-32.

Physical Examination: Temperature 100.4. Pulse 90. Respirations 30. Blood pressure 105/80. Patient was well developed, fairly well nourished; moderately dyspneic and coughing frequently, producing large amounts of purulent blood-flecked sputum. There was generalized lymphadenopathy with the largest glands in the axillae measuring 1 x 1½ cms., of a rubbery consistency and non-tender. There was a peripheral type of right facial weakness. The neck veins were distended, more so on the right.

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Both parotid glands were enlarged, firm, and nontender. The teeth were in very poor condition. There was dullness with decreased breath sounds and tactile fremitus at the right lung base posteriorly with many moist rales in both bases. Breath sounds over the left upper chest anteriorly were almost bronchial in character. There was dullness in the right chest anteriorly from the 3rd interspace downward. The heart was moderately enlarged with a rough, high-pitched, Grade III, apical systolic murmur and a diastolic gallop rhythm was noted. There was moderate abdominal distention, but no definite fluid wave. The spleen was not palpable, but the liver was thought to extend 4 fingers below the right costal margin. There was a 1+ pitting pretibial edema. The terminal phalanges of the hand were shortened and bulbous. The thumbs were flexed at the proximal interphalangeal joints and hyperextended at the distal interphalangeal joints. The skin over the ball of the fingers had a "dry peculiar feeling" and pitted on pressure. The remainder of the physical examination was essential negative.

Laboratory Data: Urine, specific gravity 1.010, albumin 2+, sugar 1+ 3-5 WBC and 1-2 RBC/HPF. Hemoglobin 13 grams, WBC 7,800, 60 polys., 2 eos., 32 lymphs., and 6 monos. Fasting blood sugar 110 mgm.%, NPN 28 mgm.%, creatinine 0.9 mgm.%. STS negative. Total protein 8.3, albumin 1.6 and globulin 6.7. Cholesterol 128 mgm.%, free 64, esters 64. Serum calcium 9.1; alkaline phosphatase 5.8 B.U. Several sputum specimens were negative for acid-fast bacilli. Venous pressure was reported as 250 mm. of water and circulation time with Decholin was reported as 55 seconds. Chest x-ray showed generalized cardiac enlargement with pulmonary congestion and probable pleural effusion on the right. The aorta was also widened. X-rays of the extremities showed essentially the same lesions as before with possibly some progression. An electrocardiogram revealed a PR interval of .24 with a rate of 95 per minute, borderline right axis deviation, with low voltage and abnormal T waves throughtout.

Attempts to aspirate pleural fluid were unsuccessful. Following digitalization the venous pressure did not fall, but the circulation time decreased to 20 seconds. Several blood cultures were negative, but one was positive for a hemolytic Staph. aureus coagulase positive, and, because of continued low-grade fever, penicilin was started in massive doses. It was felt by some that the heart murmur varied in intensity from time to time and was loudest in the tricuspid area rather than at the apex. The patient continued to cough and occasionally brought up significant quantities of blood. On September 24th it was noted that the right parotid gland had enlarged since admission and the lymph nodes had also become larger and the patient generally seemed to be worse . Another biopsy was done and again reported as chronic lymphadenitis. A few days later the patient appeared to be improved and chest x-rays showed definite decrease in pulmonary congestion. However, on October 6th the patient was found dead in his bed, having been observed to be in his usual state about 90 minutes earlier. An autopsy was obtained.

CLINICAL DISCUSSION BY DR. H. ST. GEORGE TUCKER*

This rather long and involved history can be summarized as follows:

We have a Negro male in his early forties who was followed during the last four years of his life with a variety of signs and symptoms. I think the clinical picture can be divided into several distinct groups of symptoms. First of all, he complained of pain and stiffness in most of his joints and was noted to have interphalangeal joint swelling when first seen. During his subsequent admissions this was followed to the development of considerable deformity of his fingers with some soft bulbous enlargement of the terminal phalanges and the deformity of the thumbs as is described. During this time x-ray of the hand showed some very remarkable changes. Initially, rarefaction of the bones was the chief finding. Later some narrowing of the interphalangeal joint spaces developed and finally, as I think Dr. Galston will show you, this progressed to almost complete absorption of the terminal phalanges of the fingers. Secondly, during the last four years of his life, and for two to three years before, this man had had recurrent swelling of both parotid glands, for the most part painless and not associated with fever, but with several acute exacerbations with considerable increase in the swelling of at least one parotid with pain and with fever. In addition, during his last hospitalization, he was found to have a right facial weakness. Thirdly, on all occasions it was noted that the patient had a

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generalized lymphadenopathy and finally the very interesting picture of progressive enlargement of the heart first noted by x-ray without any signs or symptoms. Then, at one point, the development of a pericardial friction rub and electrocardiographic changes suggested a pericarditis. As I say, there were no cardiac symptoms during the earlier admissions, but during the last year or so of his life symptoms of congestive failure appeared, both right and left-sided, with electrocardiograms showing various changes including conduction defects and evidence of myocardial damage. Finally sudden death may very well have been due to a cardiac cause.

Now as to the differential diagnosis, again considering this patient in the light of one set of symptoms at a time, let us first consider his joints. When this man was first seen, there were many possibilities. I think rheumatoid arthritis would certainly have to be considered at the time when he presented himself with swelling of the interphalageal joints of the fingers. The rarefaction of the bones might suggest certain other things such as a neurotrophic disturbance or circulatory disturbance. I think gout even might be considered although the picture certainly wasn't much like that. However, as the disease progressed through these various admissions, the picture is not that of any of these conditions. Certainly, when we follow these x-rays through, the changes on x-ray to my mind are not those of rheumatoid arthritis. The joint spaces perhaps are narrowed but the surface of the joint is fairly well maintained and there is simply progressive rarefaction of the bones, without cystic areas of rarefaction, leading to absorption of a good deal of the bone of the distal phalanges. I think the changes in the hands alone are quite characteristic of sarcoidosis, and I don't think they look like anything else. I'd like Dr. Galston to comment further on this. In keeping with this tentative diagnosis of sarcoidosis is the fact that this patient showed a progressive rise in the serum globulin and, on one occasion, the alkaline phosphatase was found to be high, both of which are in keeping with this diagnosis. Secondly, consider the bilateral, recurrent, parotid swelling. There are certain things that might be given consideration here such as chronic infection of the parotids or chronic obstruction associated with parotid calculi. However, this would be very unusual as a bilateral phenomena and there were no signs of inflammatory reaction in the glands. Tuberculosis and syphilis can occasionally involve the parotid but extremely rarely. I might say tuberculosis and syphilis frequently give uveitis but seldom involve the parotid and when both the uveal tract and the parotids are involved it is much more in keeping with sarcoidosis as we will mention in a minute. Another common set of disease which involve the parotid in chronic fashion such as this are the various lyphomata and leukemias. Mikulicz's syndrome is a chronic enlargement of both parotids and lacrimal glands. Mikulicz's syndrome is not a disease, it is simply a descriptive term—it may be due to a variety of agents. Probably lymphomata are the commonest cause of this condition but also occasionally sarcoidosis can produce Mikulicz's syndrome. This man did not have Mikulicz's syndrome, at least as far as the protocol tells us. His lacrimal glands were not involved. The possibility of lymphomata involving the parotid would have to be considered. However, his course is a rather benign one for the presence of a lymphoma and, as I say, we must consider all these things, but actually, the picture as far as the parotids are concerned is absolutely typical of uveoparotid fever even without the eye involvement because in uveoparotid fever the eyes may or may not be involved. The development of a facial nerve paralysis is a common occurrence in uveoparotid fever and other cranial nerves also are sometimes involved. Uveoparotid fever is almost always a manifestation of sarcoidosis. The disease, for the most part, is afebrile although episodes of fever, as the name would imply, do occur. On the occasions when this patient had fever, I'm not sure whether this was due to the disease itself or whether it was due to some intercurrent obstruction and infection. Sarcoidosis is usually a fairly benign disease without much febrile reaction but in the particular form in which it involves the parotids and the uveal tract, fever is more common and may come and go and if this patient's fever was of a duration of days or weeks it probably was a part of the syndrome of uveoparotid fever. If, on the other hand, it was simply an abrupt spike which responded to such agents as penicillin, I would think the fever was simply an intercurrent process due to perhaps obstruction of the duct and infection. At this point, however, because of the changes in the hands and the characteristic picture of uveoparotid fever, I would be willing to say without any hesi-

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tation that this patient had generalized sarcoidosis.

We then come to the most interesting part of the problem and that is the nature of his heart disease. This patient, as we said, had progressive cardiac enlargement over at least the last two years of his life. This occurred in the absence of any of the usual causes of cardiac enlargement. The patient had no hypertension, at least in the one recorded blood pressure, there was no syphilis, there were no valvular murmurs except during the terminal episode when an apical systolic murmur appeared, which I presume was due to dilatation of the heart and relative mitral insufficiency when the patient was in severe failure. Now among the various possibilities let us consider first something unrelated to the sarcoidosis which I am already assuming that he has. I think that if we saw a patient who had a picture who had a picture such as this without the other disease probably the most likely assumption would be that he had progessive coronary sclerosis with or without episodes of myocardial infarction leading to diffuse myocardial fibrosis and finally the picture of failure. That may well have been the case in this patient. The periocardial friction rub could have represented an instance of myocardial infarction. However, the EKG taken at this time does not mention any findings to suggest infarction and the mention is simply made that pericarditis was suggested. Diffuse myocardial fibrosis due to progressive vascular disease or progressive coronary sclerosis could perfectly well explain this picture, but I think would be somewhat unusual in a Negro of 40 years with no hypertension and with no other evidence of vascular disease. A few other things which can lead to generalized enlargement of the heart should be mentioned. An infectious myocarditis of a nonspecific type can produce generalized cardiac enlargement with subsequent failure. That is usually a more acute process whereas this picture came on very gradually over a matter of several years and at no point in this man's history is there anything to suggest such an acute infectious episode. Rheumatic carditis, of course, is a possibility. There is nothing in the history to suggest an attack of rheumatic fever and there are no valvular murmurs which, of course, need not occur in rheumatic fever, but in the absence of murmurs, rheumatic fever becomes a good deal less likely. Diphtheritic myocarditis could produce such a picture, but again that is more likely to be an acute process and not such a chronic enlargement. Beriberi and myxedema can give generalized cardiac enlargement but they seem rather farfetched in a patient who was followed this closely. There was nothing to suggest either one. The possibility of subacute bacterial endocarditis should be mentioned because we are told that a positive blood culture was obtained during the last admission. However, this seems unlikely to me. There are no other phenomena described which would fit in—that is, no petechiae, no evidences of emboli and the murmur described is not particularly characteristic of a valvular lesion. I am inclined to think that this positive blood culture was a contaminant. The possibility cannot be excluded, but even if he had a bacterial endocarditis terminally that would by no means explain the cardiac enlargement which had begun two years ago so that I don't think that is very tenable as an explanation for the entire nature of his heart disease. If we have already assumed that this man has sarcoidosis, could this have any bearing on the cardiac situation? Yes, it could. Probably the most common situation for the heart to be involved in is sarcoidosis as a result of pulmonary sarcoidosis, particularly of the reticular or miliary type. Sarcoidosis can involve the lung either in a patchy distribution or it can involve lymph nodes or in some cases it can give rise to a miliary type of involvement of the lung, a reticular network being seen on the x-rays and occasionally small miliary tubercles. In this latter type, the circulation through the lung may be interfered with to such an extent as to produce progressive strain on the right side of the heart and cor pulmonale, and many cases have been described of cor pulmonale secondary to pulmonary sarcoidosis progressing to heart failure. This would certainly have to be considered in this patient. However, it does seem that if such were the case this man would have had more dyspnea and cyanosis from his pulmonary disease before the development of chronic heart failure. Actually he had no cardiac or respiratory symptoms a year or so before he died at a time when his heart was already considerably enlarged. The enlargement of the heart appears to me to be rather general, not particularly right-sided. I believe there was some right axis deviation mentioned, but because I cannot see evidence either in his symptomatology or on these x-rays of that type of pulmonary sarcoidosis —that is—the diffuse type with miliary or recticular involvement of the lungs, I think it is unlikely that

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this patient had cor pulmonale secondary to pulmonary sarcoidosis. The remaining possibility is that his heart itself was involved by the sarcoidosis. This must be something of a rarity. I undertook to look the matter up and was surprised to find that it occurs not too infrequently. Longcope and Fisher in 1942 made a study of sarcoidosis of the heart. They found four cases in the literature autopsied and showing involvement of the myocardium with sarcoid. Longcope and Fisher added five cases of their own with clinical evidence of cardiac enlargement and in some cases heart failure from sarcoidosis. Two of these were autopsied and did show considerable involvement of the myocardium with sarcoidosis. In all of these cases, the outstanding feature was progressive cardiac enlargement. Some were symptom-free, some developed arrhythmias and electrocardiographic disturbances, some developed heart failure and died and at least one of the cases in the literature had a sudden death. Actually, this patient's entire cardiac course seems to me to fit quite well with involvement of the myocardium with sarcoid. Therefore, realizing that this is a rare situation and that some of the other possibilities might be more likely, I would be willing to sum up by saying that I believe that the patient's entire disease is due to generalized sarcoidosis involving the parotids, the lymph nodes, the hands, and probably the lungs or thoracic lymph nodes, although I couldn't see much of that on the x-ray, and widespread sarcoidosis throughout the myocardium causing heart failure and sudden death.

Moderator: Dr. Galston, will you demonstrate the x-ray films?

Dr. Herbert Galston: There are four chest films for evaluation which were taken over a period of time from 1947 to 1951. The lung fields in all except the third demonstrate a moderate degree of congestion manifested in both bases. The middle and upper 1/3rd of both lung fields appear essentially clear. There is nothing to suggest the miliary or the reticular pattern of a Boeck's sarcoid. In none of the films is there a significant hilar enlargement. The last chest film demonstrates considerable obscuration on the right, particularly the region of the costo-phrenic sinus, that very well could be due to a moderate degree of pleural effusion. The heart in all four films appears at the upper limits of normal as to its transverse diameter. No specific enlargement can be demonstrated. The contours of the heart demonstrate nothing unusual. Essentially, then, we have a nonspecific cardiac enlargement that has extended from 1947 through 1951. Part of this enlargement could be due to an associated pericardial effusion of moderate degree. The lung fields demonstrate congestion and on the last film there is some evidence of pleural effusion on the right.

The interesting films are those of the hands. The first film, taken in 1947, demonstrates only a questionable osteoporosis. There is none of the stigmata of rheumatoid arthritis except possibly for the nonspecific osteoporosis. It is to be pointed out that the distal tufts are all here and that there is no evidence at this time of any degree of bone atrophy. However, in 1949, (Fig. 1) in both the right and left hands there can be seen a definite loss of the bone substance involving the distal tufts of the phalanges of both hands. There has been a slight further decalcification, generalized. There is, perhaps, slight narrowing of the proximal interphalangeal joints, a location where the evidences of rheumatoid arthritis are most manifested. However, this is questionable and a slight degree of flexion of the fingers can simulate the narrowing of the joint. There is cer-

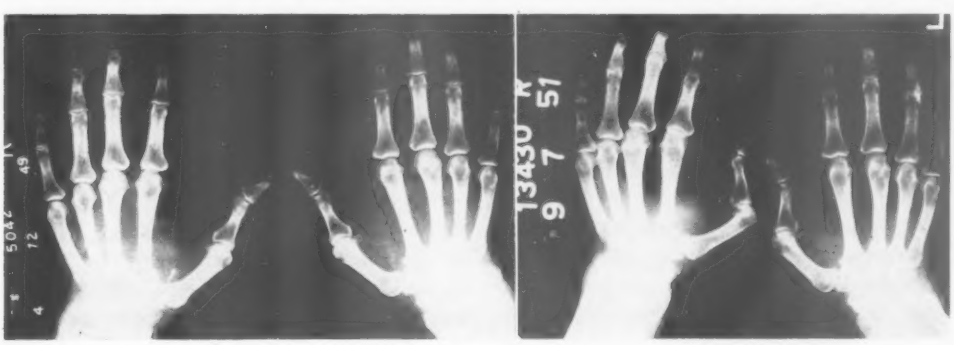

Figure 1 and 1a

tainly none of the bone loss in the joint surfaces which go along with more advanced rheumatoid arthritis. Essentially, the lesion at this time is the atrpohy of the distal tufts without evidence of periosteal proliferation. There is no evidence of bone production. It is a dry bone atrophy. The third film (Fig. 1a) in 1951 reveals further loss of bone substance involving now not only the distal tufts but the phalanges themselves. Again there is no evidence of bone proliferation or periosteal reaction. As to the differential diagnosis of these bone lesions, I would like to say first, that from the x-ray standpoint these changes are not characteristic of the usual case of Boeck's sarcoid. Bone changes occur in 10 to 15% of cases of Boeck's sarcoid and they are usually of two types. The first is a cystic type where a small radio-lucent shadow appears in the shafts of the small bones of the hands and feet and in their sub-articular areas. The second type is a so-called lattice arrangement where there is decalification with resorption of the small or minor trabeculae which gives the appearance of coarsening of the trabecular pattern. Then, a combination of these two processes occurs which is very rare and in this case bone atrophy may occur. Therefore, we cannot say that bone atrophy rules against a Boeck's sarcoid as in this case today. This type of lesion, however, as we see on these films is more apt to occur in such disturbances as Raynaud's disease or scleroderma or Buerger's disease, diabetic gangrene and so forth. Less common causes of this type of bone change are ergot poisoning, frost-bite and as previously stated very rarely from Boeck's sarcoid. So, from an x-ray standpoint I feel that these x-ray changes are more likely due to a neurotrophic disturbance such as Raynaud's disease or scleroderma.

MODERATOR: I believe that this patient was seen by Dr. Edward Ray. Dr. Ray would you care to make any comment?

DR. RAY: Our clinical impression on this patient was much the same as that outlined by Dr. Tucker. I saw this patient because of the possibility of Boeck's sarcoid, and I felt that several factors weighed heavily against the diagnosis of Boeck's sarcoid. One was the x-ray appearance of the hands which Dr. Galston has just described for us, and I felt that this was very atypical for sarcoid. Another thing was the presence of good sized lymph nodes with no evidence of pathology suggestive of Boeck's sarcoid. We frequently remove lymph nodes from the supraclavicular area in suspected cases and almost invariably if the disease is sarcoid, the lymph nodes show evidence of it. In my own experience I haven't seen any case of sarcoid which had reasonably enlarged lymph nodes which were not positive for the diagnosis. The third point, which isn't very strong evidence against sarcoid, there was nothing in this patient's x-ray picture of the lungs to indicate hilar lymphadenopathy or the usual picture of pulmonary sarcoidosis.

The clinical course is very much like that of sarcoid, but I thought that these three particulars which I have mentioned ruled against that diagnosis.

DR. KIRKLAND: We have seen two other cases of Boeck's sarcoid with similar x-ray changes in the fingers of the hands. That is what led us to make a diagnosis of Boeck's sarcoid in this patient—the unusual appearance of the distal phalanges which we had noticed in two proven cases of sarcoidosis.

CLINICAL DIAGNOSIS: Boeck's sarcoid.

DR. TUCKER'S DIAGNOSIS: Generalized sarcoidosis involving the parotid glands, lymph nodes, hands, lungs and myocardium.

ANATOMICAL DIAGNOSIS: Generalized scleroderma
PATHOLOGICAL DESCRIPTION: DR. G. R. HENNIGAR

The body was that of a middle aged, Negro male, measured 66 inches and weighed approximately 160 pounds. The development and nutrition were fair. There was two plus pitting edema of the legs. The entire skin was dry, scaly and shiny. The skin of the flexor surface of the terminal phalanges ("balls of the fingers"), was dry, and showed pitting edema. The terminal phalanges revealed a striking appearance, being markedly shortened and bulbous with flexion of the thumbs at the proximal interphalangeal joints. There was swelling in all of the interphalangeal joints.

Grossly, the skin in generalized scleroderma shows a variety of changes depending upon the stage of development of the disease. The early phase of the disease is manifested by *edema* of the subcutaneous tissue, which as a rule does not "pit on pressure". The skin is tense and cannot be folded. The next stage is one of *induration*. The skin is found to be hardened and stiff. Hyperpigmentation and depigmentation spots may appear. The end stage, called the *atrophic* stage, is characterized by a dry, inelastic shiny type of skin, especially marked over the tips of the fingers, which become smaller and pointed. The fingers become immobilized and as-

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sume a flexed position. 89% of cases have sclerodactylia.[1] Dermal ulcers may develop. Ectropion may result from atrophy of the eyelids. Recently, we saw a case of generalized scleroderma in a white, male, 23 years of age with a history of active scleroderma for 15 years. He died of multiple squamous carcinomata of the skin. Rarefaction of the distal ends of the metacarpal and phalangeal bones, seen by X-Ray may be explained on the basis of partial or complete occlusion of dermal vessels resulting from the fibrosing process in the skin.

Histologically, sections of the skin were taken from the chest, abdomen, upper arms and legs. They revealed findings compatible with generalized scleroderma, consisting of atrophy of the epidermis and skin adnexa, especially the sweat glands. Collagenization, fragmentation and "clumping" of the elastic fibers were seen in the corium in all sections of the skin examined (fig. 2). Perivascular infiltration with lymphocytes was conspicious (fig. 3). Intimal proliferation of arterioles was seen. In other cases of scleroderma, it has not been unusual to find fibrinoid changes in the vessels and a periarterial cellular inflammatory exude, rich in eosinophils. Occasionally, we have seen lesions simulating the vascular changes of periarteritis nodosa and disseminated lupus erythematosus (fig. 3). Platelet thrombi were sometimes demonstrated in the affected vessels in the case presented today (fig. 3). These give rise to hemorrhagic effusion in the corium and subcutaneous tissue. Furthermore, they cause tiny areas of necrosis in the epithelium, giving rise to papules which become infected, break down and leave superficial ulcerations. Such lesions were occasionally seen in the case today.

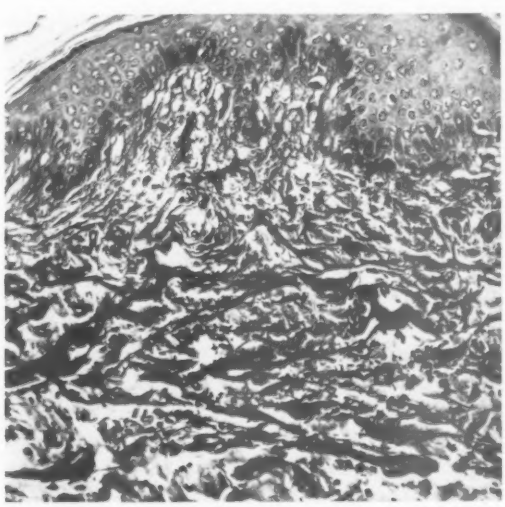
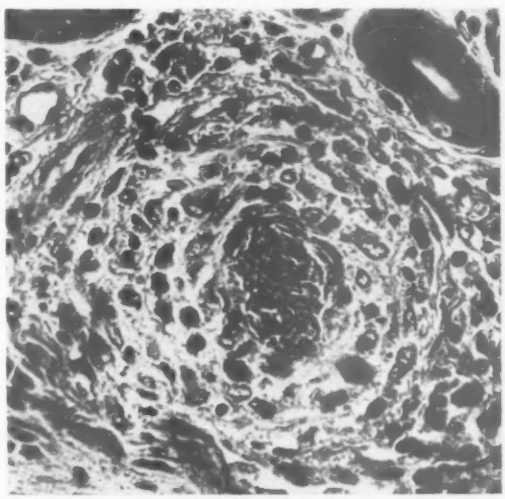


Fig. 2. Skin. The epithelium varies in thickness and there is increased pigmentation of the basal layer. The elastic fibers are clumped to form thick bands and fragmented to lie between the condensed collagen fibers. Note the absence of skin adnexa. Verhoff-van Gieson stain.



Fib. 3. Skin. A platelet thrombus occupies the lumen of an arteriole in the corium. There is a perivascular accumulation of lymphocytes and swollen fibroblasts. The picture is reminiscent of that seen in periarteritis nodosa. Two sweat glands are seen in the top half of the microphotograph.

Microscopically, sections of muscles from the intercostal, rectus, psoas, deltoid, and neck muscle groups were studied. The picture composed areas demonstrating loss of striation, atrophy of myofibrils, sarcolemmal proliferation and infiltration with lymphocytes, plasma cells and the rare granulocyte (fig. 4). The distribution was not selectively paravascular as is so often the case in periarteritis nodosa, and disseminated lupus erythematosus. The findings in the muscle were identical to cases of isolated, so-called dermatomyositis.

Generalized lymphadenopathy was a persistent clinical finding and histologically, the lymph nodes showed hyperplasia, engorgement of sinusoids with plasma cells and edema. Large germinal follicles together with pigment-laden macrophages were seen in a number of nodes. These nodes were considered to constitute the entity of dermatopathic lymphadenitis. The constant finding of abundant plasma cells and their accompanying Russell bodies are of intrest in view of the probable role of plasma cells in the manufacture of globulins. In the present case a serum globulin of 6.0 was recorded.

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The spleen weighed 300 grams. Histologically, there was congestion of the red pulp, atrophy of the lymphocytic tissue and minimal, but distinct periarterial fibrosis or sclerosis. This latter finding is seen in some cases of periarteritis nodosa and in bronchial asthma,[2] but most typically in disseminated

Fig. 4. Section of rectus muscle. Lymphocytes and plasma cells lie between the muscle bundles. In the lower half of the picture the fibers are seen to be vacuolated with round cells occupying the vacuoles.

lupus erythematosus. No areas of necrosis or esosinophilia were seen. There was no morphological or clinical evidence of hypersplenism. The spleen was not large enough to be palpated.

The adrenals weighed 5 grams each. They showed gross and microscopic changes of secondary adrenal atrophy with marked loss of lipoid in the cells of the zona fasciculata.

The liver weighed 1700 grams. Grossly and histologically this proved to be the "seat" of chronic venous congestion, the so-called "nutmeg" liver. The kidneys showed no special pathological changes except for "wire-loops" in the glomerular tufts, a finding most frequently seen in exaggerated form in disseminated lupus. The lungs did not show fibrotic alveolar septae so frequently noted in this disease. A number of sections of the esophagus also failed to reveal any changes. Fibrosis of the wall with narrowing of the lumen of the esophagus is seen in approximately 7-10% of cases of generalized scleroderma.

The heart weighed 675 grams. The gross changes were confined to the ventricles. These were dilated and hypertrophied. The wall of the left ventricle measured 1.8 cms. in diameter and the right .8 cms. The cause of the myocardial hypertrophy on the left was secondary to scarring. The cause of the right ventricular hypertrophy was secondary to pulmonary arteriosclerosis (end-arteritis obliterans), resulting from the sclerodermatous process. Histologically, the arterioles of the myocardium revealed thickening and fibrinoid degeneration. Fibrosis, often para-arterial was seen in the left ventricular myocardium. Foci of acute and chronic inflammatory cells were seen here and there. The epicardium revealed many round cells and new blood vessels. This was accompanied by fibrinoid necrosis. The coronary arteries were patent. Considerable myocardial damage and fibrosis have been described by Weiss.[3] The remainder of the pathological findings require no detailed comment and are listed under the anatomical diagnosis. The pain, tenderness and swelling of the joints in this case today were thought to be due to fibrinoid necrosis and edema of the collagen and cement substance of the soft tissue in and around the joints. Also the myositis undoubtedly contributed to the pain while the atrophic skin changes were in part responsible for the stiffness. Unfortunately, the parotids were not examined. It is probable the pain and swelling in these glands could also be due to the same underlying generalized process that took place in this patient. Sometimes calcinosis occurs in the soft tissues of patients afflicted with generalized scleroderma. This process causes pain and ulceration of the skin.

No such foci of calcium were discovered in the present case. The cardiac enlargement was due to myoarditis and pericarditis with effusion. The pericardial friction rub was due to the pericarditis. The pericarditis was histologically indistinguishable from that seen in acute rheumatic fever and disseminated lupus erythematosus. The cough with foamy white sputum, dyspnea, distention of neck veins and leg edema could be explained by cardiac failure. The increased P-R interval was due to an acute, edematous inflammatory focus in the interventricular septum. The purulent, blood-flecked sputum was due to bronchopneumonia and pulmonary infarction. The teeth were in poor condition as stated in the protocol. Although the mechanism may not have been active in this case, it is a known fact that in generalized scleroderma there is an increase in the width of the periodontal space which is occupied

by thickened periodontal membrane. The probable cause of death was myocarditis and bronchopneumonia.

Anatomical Diagnosis

Generalized scleroderma and myositis. Sclerodactylia with deformities of interphalangeal joints and osteoporosis of phalanges. Chronic pericarditis with adhesions and fibronoid necrosis. Acute and chronic myocarditis. Chronic pulmonale. Dilatation of proximal aorta. Pulmonary edema, congestion, aspiration pneumonia lower lobes. Loculated empyema in the interlobar septum between the right upper and middle lobes. Bacterial bronchopneumonia left lower lobe. Bilateral pleural effusion (rt. 150 ccs., lt. 10 ccs.). Bilateral pleuritis with fibrinoid necrosis. Small pulmonary infarction left lower lobe. Minimal endarteritis obliterans medium-sized pulmonary arteries. Acute and chronic passive venous congestion of liver and spleen. Generalized reticuloendothelial hyperplasia of lymph glands with plasma cell hyperplasia, Russell Bodies and dermatopathic lymphadenitis. So called "wire-loop" changes in the glomerular tufts. Pseudotubular change with atrophy of the adrenal cortex.

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New Drug Aids in Combating Shock.

L-arterenol, a relatively new, synthetic drug, has been found to be of value in combating shock, it was reported in Archives of Surgery.

Use of the drug in conjunction with whole blood, blood plasma and fluids helps to raise blood pressure and makes it possible for some patients in profound shock to undergo extensive, and at time life-saving, surgical procedures, according to Drs. R. E. Fremont, N. M. Luger, S. N. Surks and A. Kleinman, Brooklyn. They based their conclusions on a study of 22 patients treated with l-arterenol. The group consisted of six cases of shock associated with an acute surgical abdominal condition, 12 cases of shock occurring during or after major operations and associated in three instances with considerable blood loss, and four cases of severe hemorrhagic shock. The drug brought the patients out of shock when added to fluid replacement therapy which in itself had been ineffective.

Intravenous injections of the drug resulted in an immediate, striking improvement in the majority of cases, the doctors stated. L-arterenol is superior in its potency and controllability to some of the other similar drugs, they added. The only adverse reaction noted was a sloughing of skin.

The doctors stressed, however, that l-arterenol must not be expected to abolish advanced hemorrhagic shock if the course of bleeding cannot be detected and eradicated. It is essential, they stated, that the cause of the shock state be known and definitive therapy undertaken as quickly as feasible; lost blood must be replaced and continued bleeding stopped.

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NOTES ON PULMONARY TUBERCULOSIS*

Standard Diagnostic Study (II) The Tuberculin Test — (A)

Exclusive of its continued employment as a therapeutic agent by a few physicians (a practice never widely adopted and now almost completely discarded) tuberculin is employed in modern tuberculosis control for three distinct purposes:

1. As a yardstick to measure progress in total tuberculosis eradication within a given area.

2. For group case finding.

(The tuberculin test *also* is used for *mass contact examination* of children, as when a teacher is found to have communicable tuberculosis; this is quite different from *group screening* of children of corresponding age who have not knowingly been exposed.)

3. For differential diagnostic study.

As a yardstick

Tuberculin testing of grade school children at 5 to 10 year intervals has been performed in some localities. If incidence of positive reactors is 40% the first time around, 30% after 5 or 10 years and 15% the next time, an index is provided by which success of control measures, or at least rapidity of decline of tuberculosis, in a community, can be evaluated.

For group case-finding

Tuberculin testing for group screening of preadolescents, never extensively employed in Virginia, has been almost entirely superceded by chest x-ray survey of persons 15 years of age and above.

Except for infants, "unhealed" primary tuberculous infection, to say nothing of clinical tuberculosis, is extremely rare in children under 15 years of age, *by comparison* with older age groups. Since, in addition, almost all tuberculous infection or disease among children is known to be derived from adults rather than from other children, it is felt that maximum protection can be afforded the latter group by screening *all* their elders, with particular attention to those in the later decades of life in whom prevalence is known to be especially high.

When incidence of tuberculosis in Virginia falls generally, or in high schools, to a level where currently employed x-ray screening becomes relatively unproductive in terms of number of suspects found—the method will be discontinued. Thereafter Public Health efforts will probably be concentrated almost exclusively upon examination of close contacts to known active cases, general hospital admissions, etc., *with or without* supplementary screening by tuberculin test of special, by then low incidence, but still highly suspectible groups, as adolescents. *Pediatricians* and other physicians who care for children are urged to tuberculin test routinely those under their supervision, from near birth to adolescence. This is, however, far different from recommending the organizing of teams *at the present time* by health department or other agencies to conduct tuberculin testing projects for purely screening purposes in schools or at the pre-school level.

For Differential Diagnostic Study

The following summary of the tuberculin test, in relation to differential diagnostic study, was prepared by the State Health Department, for distribution to laymen through local health agencies: "A tuberculin test consists of introducing into the skin, by needle or by surface contact, a small amount of material derived from killed tubercle bacilli.

A positive reaction need mean, and usually does mean, only that the person tested has at one time or another been infected. Should the person tested *also* have symptoms or abnormal x-ray shadows which suggest possible presence of tuberculosis, confirmation or exclusion of this diagnosis will then depend wholly upon results obtained from application of the remaining elements of diagnostic study. Nor is degree of a skin tuberculin reaction (one plus, two plus, etc.) known to bear any dependable direct relationship to the presence or absence of clinical disease (requiring treatment), the extent of tuberculous involvement, or the true activity status of a latent tuberculous lesion.

It is generally agreed that the presence of clinical tuberculosis, requiring treatment, can, for all prac-

*Prepared by the Virginia State Health Department.

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tical purposes, be excluded in most of those who fail to react to the higher concentrations of tuberculin.

That the mere existence of a positive tuberculin test, in and of itself, need be and usually is of comparatively little significance at the time, or later, will be realized from the fact that until a decade or so ago, the tuberculin test was of comparatively little assistance in differential diagnostic study of pulmonary disease; an estimated 90% or better of adults and a very high percentage of children in most localities had already become infected by the tubercle bacillus. However, there now begin to be reported areas, at least county-wide, where virtually no positive tuberculin reactors are to be found. Throughout the Middle West, as a whole, positive tuberculin reactors are reputed to number no more than 10-15%; in the Far West, perhaps 30-40%; on the Eastern Seaboard, a maximum of 50%. Clearly, as incidence of latent tuberculous infection decreases, the value of the tuberculin test in diagnostic study increases by direct proportion, and, in recent years, has reached a point where its routine use, as an integral part of Standard Diagnostic Study to confirm the possibility or exclude the presence of clinical tuberculosis, has been recommended by the Public Health Service and by the National Tuberculosis Association, for all portions of continental United States."

It is hoped that by alerting the public to both the existence and the importance of the tuberculin test that suspects will learn to anticipate its application in the course of routine differential diagnostic study; this should make it easier for the practicing physician to include the test whenever he considers it to be indicated. (The tuberculin test need not necessarily be performed where sputum positive for Tubercle Bacilli confirms an x-ray characteristic of tuberculosis and a history, symptoms and physical examination compatible with the disease.)

On the other hand it is hoped laymen will no longer be unduly alarmed by a report of a positive tuberculin reaction—again sparing the physician unnecessary expenditure of time to reassure patients not previously conditioned to accept the report realistically.

* * * * *

The preparations used at present for tuberculin testing are:

By Intracutaneous Injection:

Old Tuberculin (O.T.)

Old tuberculin is made from a culture of tubercle bacilli in a five percent glycerine peptone bouillon. After six weeks, this culture is reduced by boiling in a water bath to one-tenth of its volume and filtered. The filtrate is then used in various dilutions of sterile physiological saline.

Purified Protein Derivative (P.P.D.)

Purified Protein Derivative is prepared by submitting O.T. to ultra-filtrations. It contains none of the constituents of the culture medium and none of the metabolic products of bacillary growth. It is alleged by some to possess a higher degree of potency than O.T., although there are physicians who have had considerable experience with both and note no significant difference. P.P.D. gives fewer pseudo-reactions. It is made up in sterile tablets of three potencies, designated as first, inter-mediate, and second strengths. These, when diluted according to instructions, yield concentrations, in each 0.1 cc., of 0.00002 mg., 0.0002 mg., and 0.005 mg., respectively. Dilutions lose their strength rapidly, and should be made fresh every day.

By Surface Contact:

The Vollmer Patch

This consists of a square of filter paper that has been saturated with Old Tuberculin. The test properly applied is roughly equivalent to an intracutaneous injection of 1:10,000 dilution of O.T. There is only the *one strength* patch test. When negative, higher concentrations of O.T. (by intracutaneous injection) must then be used, the same as though the first examination had been intracutaneous, when the test is employed for differential diagnostic study.

* * * * *

O.T., upon request, will be supplied without cost by the Bureau of Biologics, Virginia State Health Department, to practicing physicians and local health directors, for differential diagnostic study.

Unless otherwise specified O.T. will be dispensed in three bottles each containing 40 doses of the following strengths already diluted, ready for use:

1st bottle—Dilution 1:10,000 (.1cc contains .01 mg.)

2nd bottle—Dilution 1:1,000 (.1cc contains .1 mg.)

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3rd bottle—Dilution 1:100 (.1cc contains 1.0 mg.)

O.T. as distributed is usable for 2 weeks if refrigerated; at room temperature it should be discarded after one week.

Funds currently available do not permit distribution of P.P.D. without cost to private physicians. From a practical standpoint, where appointments can be made in advance, for groups particularly, O.T. appears to be equally satisfactory and much more economical.

CORRESPONDENCE

More Cures with Cortisone.

TO THE EDITOR:

In the February issue of the Virginia Medical Monthly, you reported two cases of Bells Palsy cured with cortisone in two and three weeks. So I thought it might be of interest to know of two more cases cured with cortisone, one a sixteen year old girl, cured in three weeks, and a seven year old girl, relieved in one week and entirely well in two weeks.

I also saw two cases of Herpes Zoster cured in one week with cortisone orally and locally.

CHARLES W. HADEN, M.D.

Evington, Virginia
February 18, 1954.

MISCELLANEOUS

Excerpt from Congress on Medical Education and Licensure

Licensure and medical care problems created by the heavy influx of foreign-trained doctors commanded a great deal of attention at the 50th annual Congress on Medical Education and Licensure February 7-9. The congress was sponsored by the American Medical Association's Council on Medical Education and Hospitals, the Federation of State Medical Boards of the United States and the Advisory Board for Medical Specialties.

"The infiltration of the medical profession of the United States by large numbers of doctors who have not been able to obtain a proper basic professional education is almost certain to lower the general level of practice in this country," Dr. Willard C. Rappleye, New York, dean of Columbia University College of Physicians and Surgeons, told the meeting. "The numbers coming in are so large that they cannot readily be absorbed without that effect."

Dr. Rappleye pointed out that the United States government, in fostering international good will, is admitting large numbers of displaced persons, including physicians about whose professional ability no questions are asked. More will be admitted by recent legislation which permits the entrance of several hundred thousands of immigrants above previous quotas.

Dr. Stiles D. Ezell, Albany, secretary of the New York Board of Medical Examiners, also called attention to the inadequacy of the medical training of most of the foreign doctors seeking to practice in the United States. He said that except for Great Britain and the Scandinavian countries the last war brought destruction and degeneration to European medical education.

"Even before the elimination of the last of the unapproved medical schools in this country, there had begun a migration of physicians to this country which has now reached a total of more than 20,000," he stated. "The challenge in this fact is that the profession has not been prepared to understand what is involved in such a massive movement, nor has it realized the numerous deficiencies involved in the collective educational background of this group."

He pointed out that large numbers of foreign graduates have completed specialized training without any consideration of the deficiencies in their basic medical training or their eligibilty for licensure.

Dr. Edward L. Turner, Chcago, secretary of the Council on Medical Education and Hospitals, recommended the adoption of a uniform plan for screening the professional competance of foreign-trained doctors. "It seems advisable that there should be a careful analysis of state medical practice acts with serious consideration being given to the cooperative development of some commonly acceptable yardstick or screening mechanism to evaluate competence of the foreign graduate."

Dr. Edward J. McCormick, Toledo, president of the A.M.A., told the meeting that it was the responsibility of medical educators to instill a proper sense of moral values into the minds of medical students.

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"Whether this is done by adding courses in ethics and moral principles to the curriculum, or through the medium of after-hours discussion groups, is a problem for the deans of medical schools to decide. But, I am convinced that some concerted effort in this direction needs to be made."

The financing of medical education was touched upon by two speakers. William C. Stolk, New York, president of the American Can Company and a trustee of the National Fund for Medical Education, reported that management is becoming alert to the vital significance of the 79 medical schools. Mr. Stolk said that business is accepting increased responsibility in helping to maintain high health standards and it realizes that financally solvent medical schools are a necessity.

A fast-growing interesting in postgraduate education was reported by Dr. Douglas D. Vollan, Chicago, a staff member of the Council on Medical Education and Hospitals. Presenting a preliminary report of a survey of postgraduate education by the council, Dr. Vollan said that responses from about 5,000 physicians out of 17,000 chosen at random indicated that they spent an average of 83.3 eighty-hour days a year in keeping themselves up to date.

Speaking on medical legislation, Dr. John N. McCann, Youngstown, O., retiring president of the Federation of State Medical Boards of the United States, said physicians must be brought to realize that a basic license to practice issued by a responsible state board is the sole guarantee of legal practice, not the examination given by a specialty board.

A panel on professional orientation brought out general agreement that most medical school graduates enter active practice with inadequate preparation and training in ethics, medical economics, doctor-patient relationships and social problems. Medical schools have the primary responsibility of providing such teaching, the panel members concluded but they should have the help of medical societies and physicians in active practice.

Medical education should be regarded as a continuing process which lasts throughout a physician's professional career, rather than as something which is completed when a doctor receives his M.D. degree and his license to practice, it was stressed throughout a panel discussion of postgraduate medical education. Two problems which received special emphasis were how to reach physicians in small towns remote from medical centers and how to stimulate those who have no desire to leave their practice for postgraduate courses.

Medical societies have a definite responsibility to sponsor and advance postgraduate education in order to improve the caliber of medical service to the public, it was emphasized by one panel member. Another urged that teachers of postgraduate courses should have adequate previous experience to appreciate the needs of active practitioners. A third participant suggested that there is a rich area for experimentation in the field of home-study courses. There was general agreement on the need and value of participative courses which enable postgraduate students to work closely with teachers and patients in the demonstration of clinical problems.

A committee headed by Dr. Bruce Underwood, Louisville, secretary of the Kentucky State Board of Health, suggested that a uniform Medical Practice Act be developed and be submitted next year.

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PUBLIC HEALTH

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Obesity—A Public Health Problem

Obesity has come to the front as one of the leading public health problems of our time. Overweight is a danger signal, particularly for those over 40. Studies of life insurance figures show that overweight people develop diabetes, heart diseases, high blood pressure, and other life-shortening conditions earlier, and are apt to die younger, than people whose weight is normal. They are poor surgical risks and have less resistance to infection. Stout women are more likely to develop complications in pregnancy.

It has been conservatively estimated that 25,000,000 Americans are overweight. This means that these individuals face unnecessary health hazards. Any condition which affects the life and health of so many is a public health problem.

Within the last few years, many fads and fallacies have been circulated guaranteeing easy, painless ways to lose weight. Patent medicines, claiming miraculous results, have flooded the markets. For the most part, these "quick cures" for overweight are not only worthless, but may even be harmful to the person who is "taken in" by their false promises.

Aside from the small percentage of persons who are overweight as a result of glandular abnormalities, the vast majority of overweight persons added their excess poundage by just one way—overeating. Their problem of reducing is simple in theory—it involves merely cutting down their intake of high calorie foods.

To encourage overweight persons to reduce, the Alexandria Health Department established a pilot program in weight control about four years ago. The plan developed as a result of the 1950 Multi-Test program, which the health department sponsors annually, and which revealed in that year that 30% of the persons tested were at least 10% overweight.

This program is based on the theory that the way to keep weight at a healthy minimum is to keep eating at a healthy minimum. Round table conferences are held weekly at the health department, at which time the overweight women gather to discuss the problems involved in reducing and offer helpful suggestions to each other. They exchange ideas on how they may best exercise their will power and discourage the temptation to overeat as an escape from emotional conflicts, for instance. Occasionally a dietitian, a psychiatrist, or a physician will sit at the conference table along with the participants to teach them the basic fundamentals of nutrition or to explain the psychological problems involved.

Before enrolling in the weight control program, each woman secures the approval of her family physician. She is encouraged to keep in touch with her physician and follow his instructions throughout her weight reduction project. The plan has been endorsed by the Alexandria Medical Society.

At the beginning of each weekly session, the participants weigh and mark down their weight on a chart. A record of each woman's weight is kept on a week-to-week basis. Most of the women have set a goal of losing 1½ pounds a week.

So far, the weight control conferences have been directed toward women only because they are more likely to have leisure time in which to attend the sessions than men. Overweight is definitely not limited to women, however, and a few men have attended the classes.

The weight losses of the women who have participated in this program have proved the effectiveness and success of the plan. The Alexandria Health Department has received national recognition for its pioneer efforts to present to the pubic opportunities for action on weight control as a matter of health protection.

It is anticipated that programs of this type will become increasingly popular among the public health departments of the State.

MONTHLY REPORT OF THE BUREAU OF COMMUNICABLE DISEASE CONTROL

	Feb. 1954	Feb. 1953	Jan.-Feb. 1954	Jan.-Feb. 1953
Brucellosis	4	3	4	9
Diphtheria	10	9	17	29
Hepatitis	505	182	1,014	426
Measles	1,914	464	2,886	743
Meningococcal Infections	14	31	22	60
Poliomyelitis	4	0	6	5
Streptococcal Infections (including scarlet fever)	506	750	1,113	1,601
Tularemia	5	3	16	11
Typhoid	5	1	7	6
Rabies in Animals	48	46	78	96

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MENTAL HEALTH

Joseph E. Barrett, M.D.
Commissioner, Department Mental Hygiene and Hospitals

Preliminary Report on Recent Developments in Electroencephalography at Lynchburg State Colony and Western State Hospital*

Electroencephalography is a relatively new diagnostic procedure which has been in general use for less than fifteen years. The electroencephalogram is a record of the electrical activity of the brain. The term becomes less formidable when broken down into its component parts—electro for electrical, encephalo for brain, and gram for record—and is popularly known as EEG, or brain wave test. Present methods require complex electrical equipment and specialized training for the technician who takes the records and the electroencephalographer who interprets them. The field is a rapidly developing one. The EEG, as a sensitive indicator of one type of brain function, is helpful in diagnosis and as a guide to treatment in certain neuropsychiatric problems and in addition is an important research tool. It should be emphasized, however, that the EEG can only rarely stand alone and should be interpreted and used as a part of the over-all evaluation of a given patient.

Brief mention of some of the main historical points is of interest. The study of electrophysiology began with the famous experiment of Galvani during the latter part of the eighteenth century. Electroencephalography, a branch of electrophysiology, did not get its start until almost a hundred years later, when Caton in 1875 showed that electrical activity could be recorded from the exposed brain of living animals. Others made various contributions, but Hans Berger, a German psychiatrist who began his work in this field in 1902, was the founder of clinical electroencephalography. Berger carried out careful studies on animals and humans for many years before he published his first reports in 1929. During this time there had been great advances in electrical engineering, so Berger had the advantage of better recording equipment. It is worth noting in passing that from the beginning advances in EEG have gone hand in hand with advances in electrical engineering, especially in electronics. Berger showed that fairly regular electrical patterns could be recorded from the human brain through the intact skull and scalp and that these rhythms varied under different conditions and in certain disease states. Strangely enough, his work was received with much skepticism by the medical world, and it was not until 1934 when Adrian, a famous English neurophysiologist, confirmed Berger's findings that they were generally accepted.

Early work in this country was done in New England beginning in 1934. Massachusetts General Hospital began the first laboratory for clinical electroencephalography in 1937. One of the first such laboratories in the South was started in 1940 by the Department of Neurology and Psychiatry at the University of Virginia Hospital. During the past fifteen years development in this new specialty has been rapid and it has progressed from a research curiosity to a proven diagnostic method.

Many of the first large studies were carried out in state mental hospitals, and those responsible soon recognized the potentialities of EEG. In 1942 Lynchburg State Colony became the first of Virginia's state mental institutions to provide this procedure. It has since been added in order by Southwestern, Western, and Eastern State Hospitals.

This report is concerned chiefly with recent developments in electroencephalography at Lynchburg State Colony and Western State Hospital. These have been made possible by the cooperative effort of the Commissioner of Mental Hygiene and Hospitals, the Superintendents and staffs of the two institutions, and the Department of Neurology and Psychiatry of the University of Virginia.

During the latter part of 1952 both Lynchburg and Western State were faced with the problem of continuing and developing their EEG services in the absence of trained personnel. Though both institutions had modern instruments and had operated them in the past, the service had been discontinued at each hospital when the only available trained personnel resigned. Also, the physical setup for EEG at each place was recognized as inadequate. The problem at the two institutions was essentially

*Article prepared by E. V. Jones, Jr., M.D., Director of EEG Laboratory, University of Virginia Hospital, and Consultant to Lynchburg State Colony and Western State Hospital.

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the same, and what follows refers to both Lynchburg State Colony and Western State Hospital unless specifically stated otherwise.

Discussions were carried out between the Superintendents and the Director of the EEG Laboratory, Neurology and Psychiatry Department, University of Virginia. A plan was worked out to train technicians at the University of Virginia and for the Director of EEG there to act as consultant in electroencephalography to both institutions. Plans were also considered for changing and expanding the existing physical setups. These preliminary discussions led to conferences with the Commissioner of Mental Hygiene and Hospitals and the Chairman of the Department of Neurology and Psychiatry, University of Virginia, both of whom approved the general plan.

Each institution selected from its current personnel an individual who desired special training as an EEG technician. They were sent to Charlottesville for about two months' intensive work in the EEG laboratory at the University of Virginia Hospital. The candidate from Lynchburg began training in March 1953 and the one from Western State in April 1953. Concurrently with the training of these technicians, more definite plans were made for reestablishing the EEG laboratories in new and better locations. The necessary physical changes and alterations were carried out, and each institution provided adequate quarters for the work. At Lynchburg this was accomplished by remodeling unused space in the basement of one of the oldest buildings while at Western the EEG laboratory was relocated in the central building of the new unit.

During the summer of 1953 both of these new laboratories began to operate under the supervision of the EEG Consultant from the Department of Neurology and Psychiatry, University of Virginia Hospital. The consultant makes several visits a month to each for the purposes of continuing the training of the technicians, reading records, and consulting about specific patients with members of the medical staff. Each institution is now training an assistant technician so that the work will not depend on a single individual. Both of these new units have been busy since they started operations, and there is every reason to believe that they will continue so. There is still a backlog of old patients needing this special examination, as well as many new admissions.

Both laboratories are still in the developmental stage, but even the relatively brief experience with this cooperative venture has proved its worth. It has been particularly helpful as an adjunct to the study of epileptic patients and those suspected of having focal brain lesions. In the future, routine EEG's on all new admissions can be expected to prove a valuable screening procedure. The opportunities for research are great and tentative plans for certain projects are being considered. It is hoped that facilities for a more active research program can be developed.

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Medical Society of Virginia Cancer Committee

Chairman, George Cooper, Jr., M. D.

Medical School Building, University, Va.

Reprints of this and preceding Bulletins may be obtained from this office

April 1, 1954

Case Reports

Case 1. A 64 year old man was referred to a Tumor Clinic for a palliative colostomy to relieve distress due to progressively severe obstruction of the sigmoid by an inoperable carcinoma with pelvic metastases. The referring doctor stated that he had first seen the patient eighteen months before, at which time he gave a history of bouts of low abdominal cramps, constipation and bloody diarrhea, weakness, and fever. Symptoms had been present for about a year, were becoming more frequent. Rectal and proctoscopic examinations were negative, but x-ray examination demonstrated "diverticula of the sigmoid, and a deformity probably representing carcinoma." A surgical exploration was performed. Extensive infiltration and fixation of the sigmoid was found and there were numerous enlarged glands in the areas of regional drainage. The surgeon felt that there was no need of a biopsy to establish the obvious diagnosis of carcinoma of the sigmoid. Also he felt that the palpable lymphatic metastases were too extensive to attempt a surgical cure so he simply closed the wound, later advising the patient and his physician that a colostomy should be performed when obstruction became more severe. As obstructive symptoms were now quite severe and the patient's general condition was deteriorating, the physician sent him to the Tumor Clinic to have his colostomy. Again, rectal and proctoscopic examinations were not helpful. The x-ray findings were reported as demonstrating an extensive sigmoid diverticulitis and a deformity, not characteristic of carcinoma, but so severe that the possibility could not be ruled out. At exploration, the sigmoid was found incorporated in a bulky hard mass and numerous enlarged glands were found. On frozen section of several of the glands and of several biopsies from the mass, the pathologist reported he could find no carcinoma, only inflammation. Therefore surgery was confined to resection of the involved length of bowel and an end-to-end anastomosis. Careful pathological study of the surgical specimen revealed no carcinoma, only an unusually severe chronic inflammation, apparently due to diverticulitis. The patient made a good recovery and resumed activities in which he had not been able to engage for several years.

Case II. A 53 year old woman was hospitalized for study because of symptoms suggesting a partial obstruction in the left side of the colon. The outstanding finding of a complete study was the x-ray demonstration of sigmoid diverticulosis and a pronounced deformity of the sigmoid interpreted as representing inflammatory changes secondary to diverticulitis. The patient responded nicely to antibiotics and was discharged after a second x-ray study by means of barium enema had demonstrated a partial disappearance of the sigmoid deformity. During the next six months, recurrent symptoms led to repeated x-ray studies and additional treatment on three occasions. Varying degrees of diverticulitis were reported by the roentgenologist until the last examination when a change in the contour of the deformity was noted, suggesting the development of a carcinoma in the area of diverticulitis. At surgical exploration, a bulky mass was found in the upper sigmoid and also many enlarged glands. Frozen sections were reported by the pathologist as showing carcinoma in both the biopsy from the mass and in one of several glands. Nevertheless, a length of bowel including the mass was resected and an end-to-end anastomosis performed. The patient did nicely for nearly a year, then with the appearance of liver and abdominal masses, a downhill course began which, in spite of palliative radiation therapy, ended in death two years after operation.

Comment: 1. Case 1 is another example of what can happen when biopsies are omitted because of reliance upon inspection, palpation, and clinical judgment. A patient who never had cancer at all was diagnosed as having a hopelessly advanced cancer. He endured eighteen months of mental anguish and physical incapacity when all that time he was suffering, not from incurable cancer, but from a chronic inflammation amenable to surgery.

2. In Case II, the stage of the cancer when exploration was finally resorted to makes it almost certain that the lesion had been present when earlier x-ray studies were done.

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The tumor had simply been obscured by the diverticulitis. Too great reliance upon roentgenological interpretation led to a fatal delay in correct treatment. Roentgenological interpretation is no more a substitute for pathological diagnosis than is clinical judgment.

3. Though there is no evidence that diverticulitis predisposes to carcinoma, these conditions are both fairly common in the sigmoid and may co-exist. The two cases demonstrate the confusion that readily arises. The demonstration by x-ray examination of a sigmoid diverticulitis should serve to alert all physicians involved to the possibility of concomitant carcinoma. If the diverticulitis is severe enough to alter the bowel contour significantly, surgery is usually indicated, both to find out whether an obscured carcinoma is present and to resect the diverticulum bearing portion of the bowel.

4. In Case 1, even if his clinical diagnosis had been correct, the first surgeon showed questionable judgment in not resecting the sigmoid. When the primary tumor is resectable, it should be removed, even though distant metastases are demonstrable, to relieve obstruction and to remove a source of hemorrhage and infection.

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MEDICO-LEGAL NOTES

Consent for Autopsy*

Necropsy may not be performed without proper authorization except under special circumstances. These circumstances briefly concern themselves with those considered necessary by the medical examiner in cases properly falling within his jurisdiction and in Workman's Compensation, as provided for in the Statute.

Any unauthorized interference with a dead body exposes the offender to a suit for damages by the person entitled to its custody.

Whether a person can by his will or by an agreement made before his death authorize an autopsy on his dead body is not settled in Virginia. The best opinion is that he cannot in this jurisdiction. His directions cannot amount to more than a suggested course of action which those having custody of the body may carry out as they see fit.

When the medical examiner has control of a dead body his authority is supreme. He is entitled to the body in the condition in which it was at the moment of death. Generally he is entitled to authorize an autopsy on any body coming into his lawful custody with certain statutory limitations. It is important therefore for the welfare of the pathologist that he undertake to perform no autopsy on the basis of authority from the medical examiner unless he is sure the medical examiner has jurisdiction over the body and power to authorize the autopsy.

Consent to an autopsy is not required by law to be in writing. Oral consent is sufficient. Telegraph and telephone consents are oral consents. Written consent however is the best safeguard against misunderstanding and facilitates proof of consent. The signature of a witness to the signature of the consenting party is not legally necessary.

Since Virginia has no statutory authority dealing with the right to give consent to an autopsy the common law rules prevail. At common law the right to the possession of the remains which carries with it the right to grant permission for autopsy is vested in the surviving spouse, and in the absence of any surviving spouse, to the "next of kin." "Next of kin" is the person or persons of nearest degree of relationship by blood to a person. The rule of course is subject to exceptions where the conditions of life have separated the deceased from his next of kin.

The next of kin for purposes of post mortem custody and disposal of a body are: (1) Children of the deceased, (2) Parents of the deceased, (3) Brothers and sisters of the deceased, (4) Uncles and aunts, and (5) other kinfolk in the order of consanguinity. The latter may be determined by consulting the statute which deals with the inheritance of property of those dying intestate.

In all of the groups of kin named there may be two or more persons equally entitled to the custody and control of the body. The law is not clear as to how the relative rights of the several members of any one of these groups are to be determined. As a rule the rights of the father are presumed to be superior to those of the mother although this rule has been changed in some juridictions but not in Virginia. Normally however most parents will act jointly although care should be exercised where the mother is giving consent that the father acquiesces. In cases of kinfolk, when a choice must be made among several having the same nearness of consanguinity the rule should be adopted that the one to look to is the next of kin who has custody of the body and has assumed the obligation of disposing of it. Preference may be given to the next of kin who lives in the state or community over one of an equal degree of consanguinity whose residence is more remote and whose consent cannot be obtained to permit an autopsy to be performed in time to allow prompt disposal of the body. As between two or more members of the same group having the same nearness of kin, preference should be given to the one who attained his majority over one who has not. Where the next of kin are minors but are living an independent existence they have full rights with respect to their deceased spouse and children. All rights of a spouse or any next of kin may be abandoned of course. For example where the wife is not living with her husband at the time of his decease or she refuses to assume the trust incident to her right, a waiver of the right is implied and the right immediately descends to the next of kin. The right of the spouse must be promptly asserted, or the right to possession of the body for burial will be

*Contributed by Geoffrey T. Mann, M.D., LL.B., Chief Medical Examiner for the Commonwealth of Virginia.

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held to have been waived in favor of the next of kin.

Executors and administrators, as distinguished from the family have no right over the dead body before burial.

Occasionally there is a known controversy among persons having equal rights to the custody and control of a dead body as to whether an autopsy shall or shall not be done. Under such circumstances a physician or the superintendent of a hospital will do well to consider whether the ends to be obtained by the performance of an autopsy are sufficient to justify its performance at the risk of a law suit. Even though the authority relied on for the performance of the autopsy may ultimately be shown sufficient, a physician or hospital superintendent may have been subjected to the annoyance and expense of a law suit and may be out of pocket for fees or much worse the decision may go against him with its consequent award for damages.

Finally the next of kin who has the right to permit an autopsy also has the right to restrict it. A note of such limitations should be made on the autopsy permit and the pathologist notified personally.

Care should be taken that the form of autopsy consent is legally satisfactory. For those who are in doubt as to their present form, they may obtain a recommended form from the Office of the Chief Medical Examiner.

New Plastic Dressing.

Successful use of a new plastic dressing for burns and surgical wounds has been described in Archives of Surgery, published by the American Medical Association. The dressing, a sprayable, transparent, filmforming polyvinyl plastic, is called Aeroplast (trade mark).

Originally designed as an emergency, initial local dressing for mass treatment of thermal burns, Aeroplast also meets the essentials of a good surgical dressing, according to Dr. Daniel S. J. Choy, Dayton, O. Aeroplast dressing can be removed in one piece, and preliminary studies have shown that it causes no systemic or local toxicity or sensitization.

"Use of the Aeroplast as an initial temporary dressing to prevent further wound contamination opens channels of use in front line battalion aid stations, in bomber aircraft or extended missions over hostile territory, in airfield crash ambulances, and in military and civilian rescue operations following atomic attack."

He based his conclusions on a study of 50 patients treated with Aeroplast, 11 of whom had first to third degree burns, eight of whom had skin graft donor sites which were regarded as second degree burn equivalents, and 31 of whom had other types of surgical lesions such as operative wounds and lacerations of the hands, neck, face and scalp. The Aeroplast was sprayed or painted directly onto the lesion.

Among the advantages which make Aeorplast particularly suited for mass therapy of burns, Dr. Choy stated, are: marked saving of time over conventional pressure dressings in application; the feasibility of its use by relatively untrained personnel; applicability to parts of the body poorly adapted to pressure dressings; transparency, allowing frequent inspection of the burned area without removal of the dressing, and flexibility, allowing relatively unrestricted early exercise of burned hands and digits without loss of integrity of the dressings.

Aeroplast's advantages in surgical wound cases are: no retardation of wound healing; ability to maintain the sterility of a clean wound. ease of application and removal, and transparency.

The chief drawback of the Aeroplast proved to be the 30- to 45-second period of sharp stinging felt when the dressing was applied to a raw area. The stinging sensation, however, is no worse than that of the burning caused by standard antiseptics.

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THE MEDICAL SOCIETY OF VIRGINIA

COUNCIL MINUTES

February 25, 1954

A meeting of Council was held at the Society Headquarters in Richmond on Thursday, February 25. Attending were Dr. Vincent W. Archer, Dr. Carrington Williams, Sr., Dr. James L. Hamner, Dr. Guy W. Horsley, Dr. Wilkins J. Ozlin, Dr. Louis P. Bailey, Dr. Frank A. Farmer, Dr. Harold W. Miller, Dr. Claude A. Nunnally, Dr. James P. King, Dr. James W. Love, Dr. David S. Garner, Dr. Mack I. Shanholtz, and Dr. Walter P. Adams.

Considered first was a proposal for group health and accident covereage on a state-wide basis. The proposal was presented by Mr. Charles O. Finley, Chicago, an insurance broker who explained the possible advantages to members of The Medical Society of Virginia subscribing to the coverage now in effect with the Southern Medical Association.

Heard next was Mr. John Kirk of Loyalty Group Insurance, who spoke in favor of group coverage on the local level. Mr. Kirk expressed the opinion that local agents are in a position to render better and faster service.

A proposal of the Indemnity Insurance Company of North America was then presented by Mr. Doren, who stressed the fact that his company had more local representatives than any other insurance company in the state.

After hearing the various proposals, Council discussed the matter at length, and approved a motion to appoint a committee which would study the group coverage question from every angle and make known its findings and recommendations at the next meeting of Council. The motion also provided for an appropriation not to exceed $100 to be used in securing the advice of recognized insurance authorities. Dr. Archer then appointed a committee of Dr. Horsley, Chairman, Dr. Farmer, and Dr. Bailey.

The next item on the agenda was the matter of selecting a date and location for the 1955 Annual Meeting. Both the John Marshall and the Jefferson in Richmond were holding October dates for the Society, while the Greenbrier, White Sulphur Springs, could only promise late November or December. The matters of available rooms, exhibit facilities, etc., were discussed and it was moved that a committee of Richmond physicians select the headquarters hotel. Dr. Horsley was appointed chairman. The motion carried.

A proposal to hold the Annual Meeting in connection with a cruise was tabled.

A special appropriation of $56.00 was requested to cover expenses in connection with the January 5 Conference on Problems of the Medically Indigent. The Conference was sponsored jointly by the Society and the Virginia Council on Health and Medical Care, and the expenses represented service charges and guest luncheons. It was moved and passed that the appropriation be approved.

A request was made to consider an appropriation to partially defray the expenses of Student A.M.A. delegates to their national conference in Chicago. There are two Student A.M.A. chapters in Virginia, and in both instances, their dues are not sufficient to enable their representatives to attend the very important national meeting. It was pointed out that the trip costs approximately $150. There was some thought that at least part of the expense should be borne by the students themselves. With this in mind, it was moved that each Student A.M.A. chapter in the state be granted $100 with the request that the student delegates give the House of Delegates of the the Society a short report during the Annual Meeting.

The report of the Committee to Confer with the State Board of Nurse Examiners was then read. The report had to do with the following resolution referred to the Committee during the Annual Meeting:

Resolved that properly qualified nurses be permitted to start intravenous infusions on doctors' oral or written orders and that to do so does not constitute the practice of medicine (as has apparently been held by judicial cases in the past twelve months).

The Committee's report approved the resolution, provided the word "registered" precede the word "nurses". It was moved and passed that the report be accepted.

Considered next was the matter of awarding certificates of appreciation to past presidents of the Society. Such awards had originally been planned for the 1954 Annual Meeting, but since the meeting will be a joint affair with the District Society, it was thought best to postpone the awards until 1955.

A resolution of the Arlington County Medical Society (see December 1953, Virginia Medical Monthly, page 687) which would have its members "submit through a Board of Censors for clearance, all written or oral statements concerning medical subjects" was discussed. It was reported that, in the opinion of the A.M.A., the resolution was not sufficiently clarified to create a better working relationship between the press and the medical profession. It was moved and passed that the resolution be tabled and a copy of the A.M.A. report be sent the Arlington County Medical Society.

Consideration was given a request that The Medical Society of Virginia study the advisability of forming its own insurance company for professional liability coverage. The A.M.A. had been asked for advice and reported that as a result of its studies, no encouragement could be offered such an undertaking. A motion was made to table the matter and forward the A.M.A. material to the

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interested physicians. The motion carried.

Next on the agenda was the matter of hiring a court reporter for the sessions of the House of Delegates. It was explained that while the office secretarial staff could certainly do an adequate job, a court reporter is faster and better able to record such proceedings. The question was raised as to the necessity of verbatim minutes. Also discussed was the advisability of purchasing a modern recording machine for such purpose. It was moved and passed that the matter be referred to the Executive Committee and that prior to the Annual Meeting, the Committee be requested to consider the question further and approve or disapprove the purchase of a machine. The Committee was authorized power to act.

Council was then advised of the suggestion that discussion periods, following presentation of scientific papers during the Annual Meeting, be recorded and published. It was pointed out that The Medical Society of the District of Columbia had found the cost prohibitive, inasmuch as a special reporter was necessary. A suggestion was made that, if possible, a recording machine be used to record some of the discussions. It was moved and passed that because of the cost, a special reporter not be hired to cover scientific sessions during the Annual Meeting, but if a recording machine is purchased, it should be used.

A change was proposed in the procedure whereby the General Practitioner of the Year in Virginia is nominated for the national honor. Brought out was the fact the G. P. of the Year is chosen during the Annual Meeting which usually preceeds the A.M.A. Interim Session by only five or six weeks. This leaves an incredibly short time to gather the information necessary to submit with the nomination. It was further explained that most states carry on an active campaign, and that the time element prevents Virginia from making any determined effort on behalf of its award winner. It was therefore moved that a carry-over policy be adopted whereby the General Practitioner honored at our Annual Meeting (usually in October) would be nominated for national honors the following year (A.M.A. Interim Session held in December).

A report of the Chicago meeting of the American Medical Education Foundation Committee members, prepared by Dr. Marcellus Johnson, Jr., was read. The report recommended that The Medical Society of Virginia, following the lead of several other state societies, vote an increase in membership dues of $20.00, which would be contributed to the foundation. After considerable discussion, it was decided that contributions should be kept on a voluntary basis, and that a contribution card, with an endorsement by the Society, be sent the membership. A motion was made and passed that no increase in dues be voted.

Mention was made of the fact that the Society has no official seal for decorative purposes. It does, however, have a legal one. The original seal was lost sometime around 1840, and efforts to locate it have proven unsuccessful. It was moved that Dr. Love be appointed chairman of a committee to investigate the cost of having a new seal designed and report back to Council. The motion carried.

Next on the agenda was the matter of moving a monument to Dr. Ephriam McDowell, recognized as the father of abdominal surgery, which had been erected by The Medical Society of Virginia in 1929 on the Lee Memorial Highway, 8 miles north of Lexington. Changes in the course of the highway have left the monument approximately 200 feet off the road, and the Highway Department has offered to move the monument if the Society would appropriate $200.00 to meet the estimated expense. It was moved and passed that $200.00 be appropriated for this purpose.

The following resolution was then introduced:

WHEREAS, The Medical Society of Virginia is, and always has been, vitally interested in maintaining a high standard of medical practice in Virginia, and

WHEREAS, laws have been enacted which give the Board of Medical Examiners full authority in the selection of candidates for examination, and

WHEREAS, there is constant pressure being exerted to have physicians of questionable training examined by said Board and to have the standards of practice necessarily lowered,

BE IT THEREFORE RESOLVED, that the Council and The Medical Society of Virginia assure the State Board of Medical Examiners of its high regard and deep appreciation for their untiring efforts and excellent service to the profession and to the state, and

BE IT FURTHER RESOLVED, that the Council and the Society commend the Board for this service and assure them of their full cooperation, and urge them to be ever vigilant in maintaining the high standards of practice which we now enjoy and thus safeguarding the health of the citizens of the state, and

BE IT RESOLVED, that the officers of the State Board of Medical Examiners, who are members of The Medical Society of Virginia, be invited to attend Council meetings and that all members of the Society who are on the Board be invited to attend sessions of the House of Delegates.

The resolution was adopted with the recommendation that copies be directed to members of the State Board of Medical Examiners.

Next to be considered was the matter of making the Speaker of the House of Delegates (Medical Society of Virginia) an ex-officio member of Council. This would enable him to become familiar with matters likely to be brought up during sessions of the House. It was recommended that a change in the By-Laws to make this possible be proposed at the next meeting of the House. In the meantime the Speaker will be invited to all meetings of Council.

Considerable thought was given the matter of having all committees represented at the dinner meeting of the House of Delegates held each year during the Annual Meeting. It was moved and passed that all committee chairmen be invited to attend the dinner.

There being no further business, the meeting was adjourned.

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WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA

President.....Mrs. K. W. Howard, Portsmouth
President-Elect.....Mrs. Maynard Emlaw, Richmond
Recording Secretary.....Mrs. Lee S. Liggan, Irvington
Corresponding Secretary—
Mrs. Lemuel E. Mayo, Portsmouth
Treasurer.....Mrs. William C. Barr, Richmond
Publication Chairman..Mrs. Wm. S. Grizzard, Petersburg

Auxiliary Meetings

Petersburg

The February meeting of the Petersburg Medical Auxiliary was held February 23 in the conference room of the Petersburg General Hospital.

Mrs. Milton Ende, program chairman, introduced Mr. George Bolsinsky, the hospital administrator, who spoke on the aims and future of the hospital. It is hoped that Petersburg will become a medical center for southside Virginia.

Plans for a fund raising dinner for the doctors and their wives were discussed. The dinner will be held in May at the summer home of Dr. and Mrs. Herman Farber on Swift Creek.

The semiannual rummage sale is to be held April 22nd and 23rd with Mrs. Palmore Irving in charge.

Margaret S. Whittle
(Mrs. Jos. P.)

Arlington

The regular luncheon meeting of the Arlington County Auxiliary was held at the Washington Golf and Country Club, Tuesday, February 9, 1954.

Mr. Robert Peck, one of the members of the Arlington County Board was the guest speaker. Mr. Peck gave a very informative talk on the duties and problems that confront a Board member. He also discussed the taxes, budget, school system, etc. in connection with the county operation. Following his talk, there was an open discussion with Mr. Peck and our members regarding these subjects.

Plans for the coming Fashion luncheon were discussed, also the joint meeting to be held in April with the Alexandria Auxiliary.

The auxiliary members are assisting the doctors with many of the details regarding the county and national AAPS Essay Contest. Arlington County Medical Society is offering the four county high schools, a total of $700.00 for winners, this is in addition to their eligibility in the national contest.

Earle Mitchell
(Mrs. Robert H.)

Pittsylvania

Our activities in the Pittsylvania Medical Auxiliary for March are fund raising projects; namely, a Food Sale to be held on Friday, March 5, at the Parish House of Mt. Vernon Methodist Church in Danville at 10 o'clock. Each Auxiliary member is contributing food for the sale. We are raising funds for our nurses' scholarship fund. We are trying to establish a scholarship fund for nurses (2) who wish to further their training in some speciality, after which they will give their promise to return to Memorial Hospital in Danville for a year. This Food Sale is the first in a series of ten fund raising projects to be undertaken this year by the Auxiliary.

Sally W. Pritchett
(Mrs. Drake)
Publicity Chairman

Richmond

Mrs. Kalford W. Howard of Portsmouth, president of the Auxiliary to the Medical Society of Virginia, was guest speaker at the February 19th luncheon meeting of the Auxiliary to the Richmond Academy of Medicine.

Members of the Richmond Auxiliary assisted with the nation-wide heart fund campaign during the month of February by distributing and collecting the heart shaped plastic containers for contributions to the heart fund which were set up in local stores and places of business.

Plan are being made for a benefit Tea and Tour which will be given by the Richmond Auxiliary on Wednesday, May 5, 3-5 P.M., at "Belona Arsenal", the historic and beautifully restored home of Mr. and Mrs. Merle Luck, Sr. Proceeds from the Tea and Tour will be given to Sheltering Arms Hospital.

Mrs. William P. Morrisette is general chairman and will be assisted by the following committee chairmen:

Tickets and Reservation.....Mrs. Levi W. Hulley, Jr.
Co-Chairman Mrs. Berkeley H. Martin, Jr.
Refreshments—
Sandwiches.....Mrs. George K. Brooks

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COOKIES ---------- Mrs. Gayle Arnold
PUNCH ---------- Mrs. Douglas Rucker
ARRANGEMENTS ---- Mrs. George G. Ritchie
BAKED GOODS ------- Mrs. H. Chesley Decker
PUBLICITY ---------- Mrs. James R. Grinels
HOSTESSES ---------- Mrs. Walter E. Bundy
TEA TABLE ---------- Mrs. John S. Archer
TRANSPORTATION ---- Mrs. George H. Snead

WISE

An auxiliary to the Wise County Medical Society has been formed. Following a dinner at the Liberty Cafe in Norton on February 10, 1954, officers were elected. They are: President: Mrs. W. B. Barton, Stonega; President-Elect: Mrs. C. H. Henderson, Norton; Vice-President: Mrs. D. B. Jones, Norton; Recording Secretary: Mrs. L. K. Ingram, Norton; Corresponding Secretary: Mrs. C. P. E. Burgwyn, Norton; Treasurer: Mrs. R. N. Shelly, Norton.

Meetings are to be held monthly. So far there are 31 paid members. At the second meeting held at the home of Mrs. C. H. Henderson with Mrs. Henderson and Mrs. Burgwyn as hostesses, the president announced the appointment of committees and the constitution and by-laws were adopted. Plans were made for the next meeting to be held at the Colonial Hotel in Wise at which time we hope to have some of the State Officers with us. A social hour followed the business meeting.

MRS. C. P. E. BURGWYN
Corresponding Secretary

A.M.A. Puts Positive Program in Pamphlet Form.

The testimony which President-elect Walter B. Martin read on January 28 before the so-called Wolverton committee, which is carrying on a fact-finding study of health problems, has been prepared in pamphlet form and is available from the A.M.A. Public Relations Department. All of Dr. Martin's testimony pointed to "a positive, constructive program of action" on the part of the A.M.A. To have his statement available in printed form is a valuable addition to current medical literature.

Official A.M.A. Membership Count.

As of January 1, total membership in the American Medical Association stood at 146,723. This figure is broken down as follows:

Active members, including active members excused from the payment of membership dues, 133,841; associate members, 4,534; service members, 8,078, and affiliate members, 270.

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EDITORIAL

Segregation in Medicine*

I FEEL that the average physician now practicing in Virginia, as well as the public as a whole, are, to a large extent, unaware of the discrimination now utilized against an important percentage of medical patients. Hospitalization plans, insurance benefits, payment of physician fees, and few if any of the benefits that the patient has a right to expect, and in most instances feels that he is paying for, are available to the psychiatric patient. There are probably several factors involved in this obviously unjust and, to a certain extent, dishonest situation.

One of the chief factors may be that of ignorance on the part of the various controlling boards of the actual needs of psychiatric patients undergoing an acute emotional or mental illness. They may think of the psychiatric patient as chronic individuals facing months of hospitalization with a generally unfavorable prognosis at the end. If this picture was generally representative, the executives of the various plans of hospitalization and care would have, at least, a partial excuse for their discriminatory attitude. However, the above somber picture is not true of present day psychiatry. We who are doing psychiatry have no intention of over selling our abilities. No one is more cognizant of our limitations. It is true, however, that more than half of psychiatric patients with acute emotional or mental illnesses can be materially aided by relatively brief periods of hospital care and treatment. This is especially true of the involutional reactions, various depressive states, and many acute or abortive psychiatric conditions. Anxiety reactions if accompanied by definite depression are also responsive. These conditions comprise an important percentage of psychiatric patients. The utilization of electric shock, insulin therapy and allied methods has revolutionized in many instances the duration and success of treating selected cases. The average hospital period for an involutional depression is no longer than that of a gall bladder case or a pneumonia patient, and is much shorter than many accidental injuries. Despite this, the Hospital Associations, Physician Participating Groups, and the great majority of companies refuse to recognize these patients on an equal basis with other types of illnesses and refuse to allow the patient any or very meagre benefits. Payment for the psychiatrist is either disallowed or such a small percentage is remitted as to be of little or no help in meeting the patient's obligation.

Full hospitalization is allowed for all surgical procedures. Most, if not all the usual medical problems, are fully covered. Adequate if not liberal payment is made to the attending physician or surgeon, but the psychiatric patient and his family, of equal economic status and a comparable period of disability, are ignored. Many patients have carried, for years, various types of hospital and medical insurance and felt secure in doing so. They have not fractured a leg, developed appendicitis or pneumonia but when confronted with a mental illness of a type responsive to therapy find, in most instances, their needs either greatly curtailed or completely ignored. The above problem is repeated daily in the practice of every psychiatrist, certainly in this area.

Another factor may be that psychiatrists comprise such a minor proportion of the physician population, and that psychiatric patients are relatively fewer. The associations are dominated or controlled, to a large extent by those in surgery, general medicine, or the larger specialties.

These physicians, through indifference, lack of understanding, self interest, or for various reasons of their own have refused to concede the patient who is ill emotionally

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or mentally the advantages he has a right to expect as a member of the community in need of hospital care and therapy. It is almost as if the decision as to illness and need of treatment is to be made by edict and not by the physician to whom the patient looks for help. From the standpoint of suffering disability and economic effects, the acutely depressed individual should certainly not be disallowed the benefits which his next door neighbor with gall bladder disease, a fractured leg, or similar misfortune receives without question. No one can choose the type of illness to acquire; he should not have to gamble that it will be one recognized as non-psychiatric.

Another factor, that I trust is not true but could be unconsciously motivating, is the century old custom of cataloguing emotional or mental illness as being somewhat degrading, a sort of disgraceful thing to have; carrying the suggestion of a stigma. It may be felt that these patients are not entirely on the level but could cure themselves if the effort were made, and that to give them the benefits of ordinary hospital care, as allowed others in different fields, would only pamper them and not be effective. Any physician who has seen an agitated depression, full of guilt and anxiety, who has walked the floor for nights, taken no nourishment for days, and is at the end of his emotional capacity, could not possibly condone this conclusion. Emotional pain is agonizing, no less than physical suffering, and requires prompt and adequate treatment.

Another consideration that is of importance: If insurance companies, hospital associations and allied groups continue to discriminate against the psychiatric patient, this is bound to increase the pressure for Government Health Insurance. The head of a family who finds himself burdened with a large hospital and medical debt because his wife became emotionally ill while his neighbor across the street is relatively free from such a burden because his wife fortunately had an organic illness, is going to seek some relief from this inequality. If private agencies do not do this you have another supporter of socialized medicine. The obligation is clear in my opinion.

In conclusion, the thought arises that psychiatry, though relatively young as a specialty, is improving its therapeutic methods. More help is available to the emotionally and mentally ill now than at any time in the past, and improvements are continuing. However, if psychiatrists and their patients are to be set apart in hospital benefit planning and discriminated against in their professional efforts, the medical fraternity is lacking in the vision so long reputed to it.

THOMAS N. SPESSARD, M.D.
712 Botetourt Street
Norfolk, Virginia

*In the next issue of the MONTHLY Dr. Richard Ackart will present the point of view of the Virginia Medical Service Association regarding the psychiatric case.

SOCIETIES

The Warwick-Newport News Medical Society

Held its dinner meeting on March the 9th, at the James River Country Club, under the presidency of Dr. William A. Read of Newport News. Dr. Edward P. Cawley, Professor of Dermatology at the University of Virginia, was the guest speaker. His topic was "Diagnosis and Treatment of Melanoma and a Discussion of Nevi". Dr. F. Ashton Carmines of Newport News is secretary.

Richmond Academy of Medicine.

Dr. Alfred D. Dennison, Jr., addressed the regular meeting of the Academy on March 9, which was put on by the General Practice program. His subject was "Diagnosis of Unusual Complications Following Myocardial Infarction". He is with the Clinical Research Department of Eli Lilly and Company and is a specialist in Internal Medicine and Cardiology and engaged in private practice in Maplewood, New Jersey.

The Tazewell County Medical Society,

At its regular meeting in December, elected the following officers for 1954: President, Dr. W. R. Strader, Richlands; vice-president, Dr. C. C. Bowen, also of Richlands; and re-elected Dr. Mary Elizabeth Johnston of Tazewell as secretary-treasurer.

At its regular semi-monthly meeting on February 17 at the River Jack Restaurant with Dr. Strader presiding, the scientific program consisted of viewing a film prepared and released by Lederle Laboratories on "The Treatment of Parkinson's Disease".

Fairfax County Medical Society.

At the meeting on February 9th, at the home of Dr. William Harris in Falls Church, a paper was read by Dr. Joseph Beinstein, Arlington, on "Recent Advances in Hypertensive Therapy".

It was noted that attendance at these meetings has increased by 200% during the past year.

The meeting on March 9th was at the home of Dr. Alice Kiessling in Falls Church. Dr. William Thornton Spencer spoke on neurological aspects in general practice.

Alice H. Kiessling, M.D.

The Princess Anne County Medical Society,

At its last regular meeting, elected Dr. Ralph Stata of Oceana as president and re-elected Dr. James W. Todd of Virginia Beach as secretary.

Lynchburg Academy of Medicine.

At the regular meeting of the Academy on February 8th, Dr. H. St. George Tucker of the Medical College of Virginia, Richmond, spoke on "Endocrine Disturbances of Childhood".

It was moved that the anual business meeting, usually held in December of each year, be changed and held in June, officers being elected at that time to take office in September.

Frank N. Buck, *Secretary*

The Virginia Peninsula Academy of Medicine

Met on February 17th at the Coca-Cola Building in Newport News. Dr. Harry Bakwin, Professor of Clinical Pediatrics, New York University, spoke on "Psychic Disturbances in the Adolescent Child".

At the meeting on March 17 at the Langley Air Force Base, the speaker was Dr. Robert J. Coffey, Director of the Surgical Department at Georgetown University, Washington. The subject of his address was "Polyps and Their Relation to Carcinoma of the Rectum".

Dr. Chester D. Bradley and Dr. W. T. Watkins, Jr., both of Newport News, are president and secretary respectively, of the Society.

NEWS

On to California!

"Go West, young man . . ." is as up-to-date a piece of advice today as it was in Horace Greeley's time. More than 11,000 physicians from all parts of the country are expected to heed this counsel by attending the AMA's 103rd Annual Meeting, June 21-25, in San Francisco. This year's scientific program offers physicians an opportunity to see and hear about the newest developments in medicine.

All scientific and technical features will be located in the convenient Civic Center—with both the Scientific and Technical Exhibitions in the Civic Auditorium. The Scientific Exhibit, presentng more than 200 displays of new treatments and techniques, will

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provide plenty of opportunity for discussion of individual problems with the demonstrators. More than 350 commercial exhibits, including presentations by leading drug, supply and publishing firms, will make up the Technical Exhibit in the Auditorium and adjoining large Portico.

General scientific sessions will be held in the High School of Commerce Auditorium. Scientific section meetings and motion picture films will be held in the Masonic Temple, High School of Commerce, War Memorial Veterans Auditorium, California Hall and other buildings adjacent to Civic Center. The House of Delegates will convene at the Palace Hotel.

Scientific Exhibits for Annual Meeting.

Members of The Medical Society of Virginia will soon receive detailed information and application forms concerning scientific exhibits for the annual meeting October 31-November 3.

The procedure is somewhat different this year since the meeting is a joint affair with the Medical Society of the District of Columbia and will be held at The Hotel Shoreham in Washington. All applications should be returned to Dr. Alfred A. J. Den, Chairman, Committee on Scientific Exhibits, First Interstate Scientific Assembly, Medical Society of the District of Columbia, 1718 M Street, N. W., Washington 6, D. C., *not later than May 1.*

The Southwestern Virginia Medical Society

Will meet at the Martha Washington Inn, Abingdon, Virginia, on April 15, 1954 at two o'clock p.m.

The Afternoon Program will be:

Symposium on Reontgenology, moderated by Dr. V. W. Archer of the University of Virginia.

Dr. Gerhard Gabriel, Abingdon ..... Stomach
Dr. Charles Peterson, Roanoke ..... Head
(Or a member of his group)
Dr. George NcCall, Bristol ..... Chest
Dr. Carey Stone, Radford ..... Skeletal System

Each paper to be followed up with a question period and the symposium concluded by Dr. Archer.

"The Newer Drugs in the Treatment of Hypertension" by Dr. Homer A. Sieber of Roanoke, this will be about 30 minutes long.

Dr. Charles A. Young, Jr., of Roanoke, will give a paper on "Common Diseases and Congenital Anomalies of the Internal and External Eye."

Evening Program at seven o'clock p.m.

Banquet

Dr. V. W. Archer will give a short talk on his objectives as president of The Medical Society of Virginia.

"Medical Aspects of Nuclear Energy."

1. Medical Uses of Radioactive Isotopes," by Dr. Malcolm P. Tyor, Internist with the Oak Ridge Tennessee Institute of Nuclear Studies.
2. "Procurement Safe Handling and Clinical Applications of Radioactive Isotopes" by Mr. James R. Mason, Chief, Allocations Branch, Isotopes Division.

The Role of Education in the Control of Cancer.

We still face the cruel fact that perhaps only 15% of the people who develop cancer are being saved, whereas from 30% to 50% of them should be saved, based on present knowledge of cancer. Research and better facilities for treatment will not help those who fail to realize in time their need of help.

Education is perhaps the most effective weapon of public health. Nowhere can it be used with such telling effect as against cancer. Cancer is not hereditary or contagious. Fear and ignorance have long been responsible for a large part of the death toll from cancer. The public should be educated to recognize the "danger signals" of the disease.

Most cancer is curable when detected early and treated promptly and properly. The best insurance against the disease is a physical examination by a competent physician at least once a year.

Do your part in the campaign—learn about cancer. What you learn may save your life.

Tri-State Medical Association of the Carolinas and Virginia.

The annual meeting of the Association was held in Charleston, S. C. on February 22 and 23, under the presidency of Dr. G. G. Dixon of Ayden, N. C. Dr. F. E. Kredel of Charleston, S. C. succeeded to the presidency and Dr. Paul D. Camp of Richmond, Virginia was named president-elect. Dr. A. A. Creecy of Newport News, was elected as Virginia's vice-president. The next annual meeting of the Association will be held at Hotel Chamberlain, Old Point Comfort, in February 1955.

Northern Virginia Clinical Assembly.

The Fifth Annual Northern Virginia Clinical Assembly, sponsored by the Alexandria Medical Society, will be held on Sunday April 25, 1954 at the Magnolia Room, Hunting Towers, Alexandria, Virginia. The Scientific Program will be presented by the Faculty of the University of Virginia School of Med-

icine. For a nominal registration fee all physicians are cordially invited to the Scientific Program, noon luncheon, and evening cocktail party. Physicians' wives and other guests are welcome.

Arlington Society Publishes Bulletin.

The first issue of the Arlington County Medical Society Bulletin was issued on February 15th and is scheduled to be published monthly. This replaces the former News Letter to their members and is the official news publication and will contain items of news, letters to the editor, and scientific articles including case reports. The cost of the Bulletin is handled through advertisers.

The first issue is a very attractive and interesting four-page bulletin and contains items of interest on a local, state-wide and national basis as well as calendars of coming meetings and medical lecturers. The editorial staff is composed of Drs. Lloyd B. Burk, Jr., A. R. MacPherson, and Albert Rigsbee.

Dr. K. D. Graves,

Roanoke, was installed as vice-president of the Federation of State Medical Boards at their annual meeting in Chicago, February 7-9. Dr. Elmer W. Schnoor, Grand Rapids, Michigan, succeeded to the presidency, and Dr. M. H. Crabb, Fort Worth, was named president-elect, with Dr. Walter L. Bierring, Des Moines, secretary-treasurer for the 40th year.

Dr. John P. Lynch,

Richmond, has been named chairman of a five-member advisory committee to the Instructive Visiting Nurses Association. Other members are Drs. Coleman Booker, Hubert Dougan, James B. Black, and Gwendolyn Hudson.

Dr. B. L. Phillips Honored.

A tea was given by the Powhatan Hill Junior and Senior Woman's Clubs of Richmond on February 21st in honor of Dr. Phillips who is celebrating his fortieth year of practice in that section of the city.

Calendar of Coming Events.

The Monthly will soon feature a Calendar of Coming Eevents—both local and national.

Should you wish the meetings of your Society, specialty group, etc., to be listed, the information should reach the Editor not later than the 10th of each month.

Dr. Philip Coleman,

Richmond, was Visiting Chief for Post Graduate Medical Education Program in Wilmington, N. C., February 3-5, during which time he addressed the New Hanover County Medical Society on "Carcinoma of the Lung". During the three day program, surgical subjects of interest to the general practitioner were discussed and daily ward rounds were held at the James Walker Memorial Hospital.

Examinations for International College of Surgeons.

Qualifying examinations for fellowships in the International College of Surgeons will be held on May 3 and 4. Written examinations will be given at Cook County Graduate School of Medicine in Chicago on the morning and afternoon of the 3rd, and clinical examinations will be held at Cook County Hospital on the 4th.

The Memorial and Crippled Children's Hospital,

Roanoke, held its Fifth Annual Post-Graduate Day on March 24th. The following scientific program was presented: Medical and Surgical Management of Peripheral Vascular Diseases by Dr. Keith S. Grimson, Duke University; Clinical-Pathological Conference with Dr. Alto E. Feller, University of Virginia, as clinician, and Dr. James C. Gale, Roanoke, pathologist; Immunization Against Poliomyelitis by Dr. Edward C. Curnen, University of North Carolina; Panel Discussion on Uses and Complications of Therapeutic Agents for Infections with Dr. Feller as moderator; and Recognition and Management of Ureteral Injuries by Dr. Thomas Moore, University of Tennessee.

Dr. J. M. Emmett,

Clifton Forge, has been reappointed by Governor Stanley for another four-year term on the board of visitors of the University of Virginia.

American Society of Medical Technologists.

The 22nd annual national convention of this Society will be held at Miami Beach, Florida, June 13-17. The co-headquarters hotels are the Delano and DiLido.

"March of Medicine" Programs.

The first of the new series of television programs by Smith, Kline and French Laboratories and the American Medical Association was on March 11th,

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the subject being on overweight. The next show will be held on April 29th with arthritis as the topic. The third program will be on June 24th, the subject to be announced.

These programs will be on the NBC television network at 10:00 P.M., replacing the "Martin Kane" show.

Mental Hygiene Society Changes Name.

The Mental Hygiene Society of Virginia changed its name at its Annual Meeting, February 12-13, in Charlottesville, and elected new officers. It is now the Virginia Association for Mental Health and Dr. Granville L. Jones, Superintendent of Eastern State Hospital, Williamsburg, is president. Other officers elected were: Mrs. Overton Dennis of Richmond, 1st Vice-President; Dr. Rex Blankinship of Richmond, 2nd Vice-President; Miss Martha Bell Conway of Richmond, Recording Secretary; and H. Coleman Baskerivlle of Richmond, Treasurer.

The Association will coordinate Mental Health Week activities in Virginia, May 2-8, and will participate wth the National Association for Mental Health in the Mental Health Fund Campaign during the month of May.

Polio Vaccine Tests.

Two methods of conducting the nationwide polio vaccine tests this spring will be followed by the National Foundation for Infantile Paralysis, it has been announced by Dr. Hart E. Van Riper, Medical Director.

Making public a letter from the National Foundation's Advisory Committee on Vaccination to the editor of the Journal of the American Medical Association, Dr. Van Riper stated that in some states half the school children in the first, second and third grades in selected counties will be given the trial vaccine and the other half will be given an ineffective substance. In other states children in the second grade only will receive the vaccine, with first and third grade pupils acting as statistical controls.

The combination of these two plans will assure a valid evaluation of the trial vaccine, he said. In case the amount of trial vaccine available is less than that originally contemplated, the Committee recommended that by far the larger part of it be used in areas where the first plan can be properly administered.

The states in which the studies will be conducted are now being chosen, he added. Because of the necessity for additional facilities such as accessible virus research laboratories, only a few states will be selected to conduct the studies involving the giving of the vaccine to one-half the children in the first three grades.

The vaccine trials are to begin in late March or early April.

The Medical Library Association

Will hold its fifty-third annual meeting June 15-18, 1954, in Washington, D. C. The headquarters will be the Hotel Statler, and the official host the Armed Forces Medical Library.

The program will include a discussion on medical research by embassy attaches, tours of the National Institutes of Health, the National Naval Medical Center, and of the Armed Forces Medical Library.

Further information can be obtained from Lt. Col. Frank B. Rogers, Armed Forces Medical Library, 7th Street and Independence Avenue, S. W., Washington 25, D. C.

The Stoneburner Lecture Series

And a Symposium on Pulmonary Disease were put on by the Medical College of Virginia, Richmond, in March. Evening lectures were given on March 24 and 25 by Dr. Alvan L. Barach, Clinical Professors of Medicine, College of Physicians and Surgeons, Columbia University, New York, and a number of interesting subjects were discussed by prominent speakers during the days of March 25 and 26.

The William H. Osborn Foundation

Has been established in honor of the late Col. W. H. Osborn, North Carolina industrialist and philanthropist, as a loan fund without interest to help alcoholics of low income arrange for hospitalization and treatment under conditions set forth by the trustees. This is to be a revolving fund to aid in the rehabilitation of deserving alcoholics throughout the Southeast, according to Mrs. Osborn, president of The Keeley Institute, at Greensboro, North Carolina.

The International Congress on Diseases of the Chest

Plans to hold its third congress in Barcelona, Spain, October 4-8, 1954. Information as to presenting papers, scientific and technical exhibits, hotel accommodations and pre- and post-convention tours may be secured from the Executive Director,

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American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

National Fund for Medical Education.

Congressman Richard H. Poff, of Virginia's Sixth District, has introduced a bill in the House of Representatives of the United States, with the approval and consent of the American Medical Association, to incorporate the National Fund for Medical Education. The Fund is a cooperating agency of the American Medical Education Foundation and seeks its funds primarily from business and industry.

Commenting upon the bill, Congressman Poff stated, "I am convinced that this organization is carrying on work of vital importance to the welfare of the Nation. In view of its national character, its service to the medical life in all parts of the country, the National Fund for Medical Education is uniquely qualified for a national charter. I am of the opinion that such a Federal charter will be of aid in accomplishing the important objectives of this organization. Moreover, this endeavor, supported and managed as it is by private enterprise, is an effective answer to increasing public clamor for federal subsidies for medical education. What the government subsidizes it controls. My bill will not cost the federal government one dime."

Our Responsibility.

When it comes to medical education, too many of us are prone to forget how much we received from our medical schools. Although we continue to expect more and more of them, we little realize their problems and have been so very careless in assuming responsibility which would help solve them.

If they are to continue their present usefulness, they must have funds which are not now available. All of us want to see them expand their facilities and increase their effectiveness in meeting the ever increasing demands for student and graduate medical education.

The American Medical Education Foundation was organized to raise funds from individual physicians and medical groups for that purpose, and to try to avoid governmental aid and control. If our goals are to be realized and our schools are to be kept free, all physicians must make up the difference by voluntarily contributing to the A.M.E.F.

I only hope that all physicians will come to sense their true responsibility and join in making the A.M.E.F. campaign a real success.

James L. Hamner, M.D.

Doctor's Office—

Ideal location outside of Washington in expanding community of Alexandria, Virginia. Complete 5-room house available for use as office in area needing services of a physician. Owners willing to assist Doctor to get started. Telephone Mr. Charles Gerstein for appointment—TE-6-9378—or write him at 13 East Myrtle Avenue, Alexandria, Virginia. (*Adv.*)

For Sale.

Ranch type cottage furnished. Three bedrooms, large living room with fireplace, bathroom, kitchen, front porch and large breezeway. Located off highway #33, about 60 miles from Richmond and 5 miles from Urbanna. Over two acres of land with sandy beach. Gas stove, electric refrigerator and electric water pump. If interested, write "Cottage", care Virginia Medical Monthly, P. O. Box 5085, Richmond 20, Va. (*Adv.*)

For Sale.

40-Bed, well equipped, small town hospital. Address Physician's Hospital, Incorporated, Warrenton, Virginia. (*Adv*).

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OBITUARIES

Dr. Henry L. Segar,

Who practiced medicine in Warsaw for fifty-three years, died March 6 after a brief illness. He was eighty-four years of age and a graduate in medicine from the Medical College of Virginia in 1898. In addition to his practice, Dr. Segar operated a farm near Warsaw and was for fifty years a vestryman in the Episcopal Church there. He was a member of the Northern Neck Medical Society, a Life member of The Medical Society of Virginia, and a director of the Northern Neck State Bank. Three sons survive him, his wife having died in 1948.

Dr. Alvin Fleet Bagby,

Richmond, died February 26 in Sarasota, Florida, where he was spending the winter. He was a 1912 graduate of the Medical College of Virginia and was engaged in the practice of eye, ear, nose and throat diseases in this city until his retirement seven years ago. His wife survives him. Dr. Bagby was formerly a member of The Medical Society of Virginia.

Dr. Henry Bernard Bristow,

Tappahannock, died February 19th, at the age of seventy-five. He was a graduate of the Medical College of Virginia in 1903 and had practiced in Essex County since that time. His wife and three children survive him.

Dr. Everett I. Evans.

The Richmond Academy of Medicine on February 23, adopted the following appreciation of Dr. Evans:

Everett Idris Evans died on January 13, 1954. Medicine has lost an outstanding student and teacher, and this community, a distinguished citizen.

Born in Norfolk, Nebraska, April 15, 1909, of Welch stock, he was educated in Nebraska and Iowa to the B.S. degree at Coe College, and toward a graduate career at the University of Chicago for a Ph.D. in 1934 and his M.D. in 1936. Residency appointments took him to Philadelphia, Boston and Richmond in 1942. In the 12 years since this first appointment at the Medical College of Virginia he organized research facilities, secured generous research grants from the Army, Navy and Public Health Service, developed an outstanding experimental and clinical laboratory, and made as well as stimulated others to make valuable fundamental contributions to the science of medicine. In his associations with those who came into these laboratories, he possessed that unique ability to offer guidance without pointed direction, so that each individual worker felt a research freedom which is seldom attained in the large grant "projects".

He possessed those capacities which quaiify but few as a philosopher in the medical arts and sciences. Under his influence, students sensed the meaning and the mystery of many of the processes of life. The underlying problems of disease which so often are overlooked or lost in dull academic rhetoric became vital and stimulating. Under his influence his associates and colleagues examined themselves, their methods, their reasoning, their observations and their conclusions. His patients too felt the assurance that all of the experience which could be focused upon their disease problem had been effective under his care.

Impatient with mediocrity, uncompromising in his aspirations for the work of his laboratory or the welfare of his colleagues and associates, Dr. Evans lived intensively himself. He was capable of enthusiasm and elation and of discouragement and depression which were a part of his creative genius.

He was a man of few but intense personal loyalties and deep friendships. Outstanding among these was his chief in surgery in the Medical College of Virginia. Through an uncommonly vigorous and demanding life which the military and the scientific world exacted of him, his family—his devoted wife LaVerne—remained the home of his restless spirit. His associations with three growing children were among the deepest satisfactions of his life.

There are men today who are the richer for having known Everett Evans—richer intellectually, perhaps more sensitive emotionally, certainly more courageous in their quest for truth and common sense. He was respected, admired, and known internationally. In the tributes which have come from all parts of the world upon the death of Dr. Evans it is striking that this admiration for his scientific abilities is so often expressed in terms of personal warmth and genuine fellowship.

Of his honors only a few will be read this evening, and a more complete list will be appended for the record.

While Professor of Surgery and Director of the Surgical Research Laboratories at the Medical College of Virginia he served also as:

1940-46—Responsible Investigator, Office of Scientific Research and Development (Shock and Burns)
1946 —Committee on Surgery, National Research Council
1948 —Committee on Atomic Casualties, National Research Council; Committee on Burns (Chairman), National Research Council; Principal Investigator, Research and Development Board Office of the Surgeon General, Department of the Army; Surgical Consultant, Atomic Bomb Casualty Commission, Far East Command (Japan).
1952 —MacArthur Lecturer, University of Edinburgh, Scotland; Hunterian Lecturer, Royal College of Surgeons, London; Distinguished Service Award, University of Chicago
1953 —Coe College, Distinguished Service Award

Sespectfully submitted,

JOHN *B.* TRUSLOW, *Chairman*
G. WATSON JAMES